UBC Social Ecological Economic Development Studies (SEEDS) Student Report

An Investigation into Interactive Art for SUB Atrium

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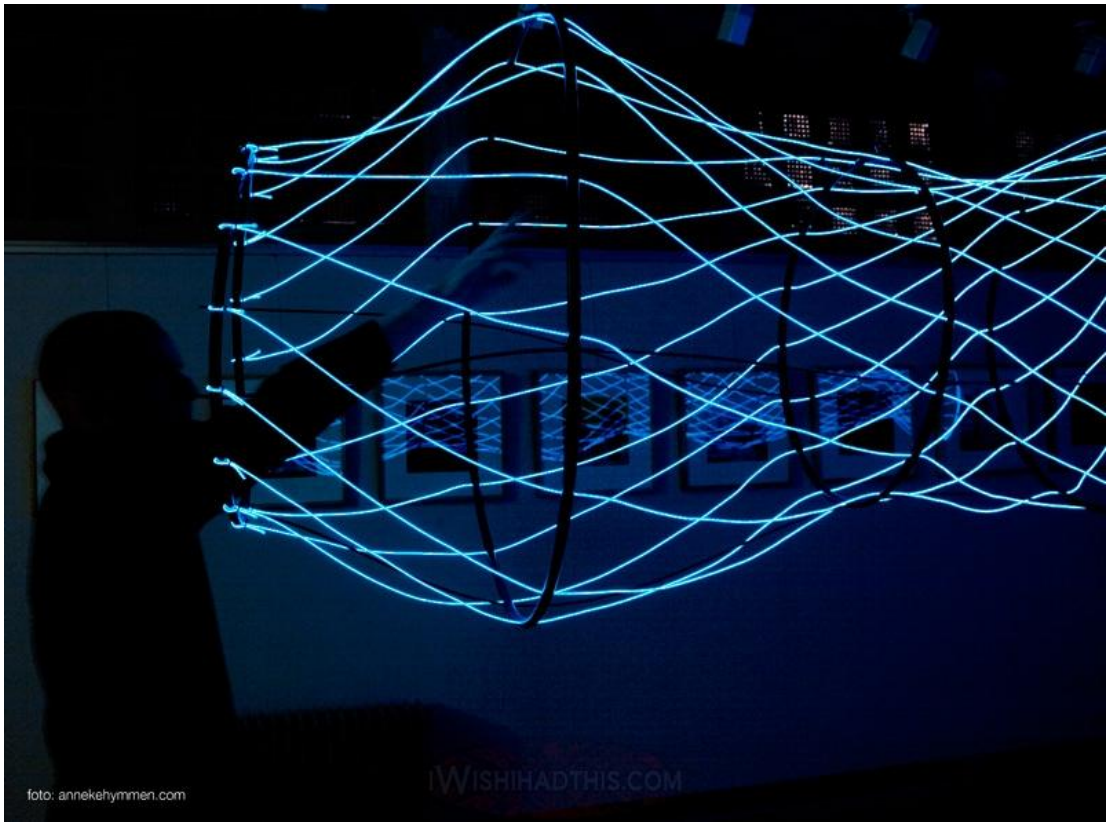

Paul Klotz, Tunnel Vision, Feb15, 2008(www.annekehymmen.com)

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ABSTRACT

The Design Committee and the AMS are cooperating with APSC 261 to generate ideas for the new SUB design. The Design committee is considering having an art piece made of recycled items to inspire sustainability for the SUB Atrium. This project is making a recommendation based on triple bottom line analysis. Considering the purpose of the art is to inspire people and showcase the idea of sustainability, Interactive Art is the most suitable option for the Atrium. It could easily have impacts to the spectator. Moreover, it has a longer life time compared to stationary art. Looking at the social aspect of the art piece, people are interested in interacting with multimedia to learn new ideas. Meanwhile, this project proposes the design committee should let the students design the art piece instead of a commissioned artist. This will help students to gain experience and eliminate the expensive cost of art labour. This report also evaluates ways to minimize the environmental impact of the proposed artwork. Instead of recycled or reprocessed material, it is recommended to reuse materials that are available within the UBC campus. To reprocess material involves cleaning and modifying, it could have a worse environmental impact compared to purchasing new parts.

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1.0 INTRODUCTION

The purpose of this report is to do a triple-bottom-line assessment for a proposed art piece at the new Student Union Building (SUB). The art piece is to be made of recycled material and inspire sustainability. In this report we will evaluate the social, environmental, and economic implications of the proposed art piece.

Our team is proposing the idea that the art piece be interactive. Interactive art can be defined as "a form of art that heavily involves spectators when projecting the artwork to them. Spectators either experience the piece of art through physical touch or by initiating interactivity in response to the artwork. The work evolves according to the feedback from the audience along the way." (Wong et al., 2009) Hopefully, spectator involvement with the art piece will provide a more memorable experience, thus better promoting sustainability.

The art should be made from recycled material, inspire environmentally friendly living, and have a practical function. One possibility could be a stationary bicycle that generates electricity and charges your phone. Bicycle powered phone chargers are commercially available and relatively inexpensive (Stevenson & Virki, 2010). Since the artwork will be made from recycled material and produce electricity, it should be inexpensive and slightly offset electricity costs. The artwork should also be well received by the student population.

2.0 SOCIAL ASPECTS

2.1 Survey

To assess the social implications of the proposed art piece, we created a survey. The survey consisted of 6 questions:

1. How much should UBC spend on the inspiring art piece?
2. Is art an effective medium to inspire sustainability?
3. Any ideas on what the art piece should be made from?
4. Would you prefer an interactive artwork as opposed to traditional art?
5. Should the art be permanent or periodically changed?
6. What are your thoughts on a stationary bicycle that could generate electricity to charge your phone?

The survey was targeted towards the demographic of UBC students. It was implemented on Thursday Nov 10th, 2011, outside the current Student Union Building.

2.2Results

1. A total of 44 UBC students participated in the survey. The first question addresses the issue of how much money should be allocated to the artwork. The survey gave an average of $8,996 with a standard deviation of $33,722. The median and mode are better indicators of how much money should be spent on the art: their values are $2,750 and $3,000 respectively.
2. The second question asked participants if they thought art was a good medium to inspire sustainability. Roughly seventy-three percent of students thought that art was a good medium to promote sustainability. Twenty-five percent thought that it was not. About three percent thought that it could be an effective way to inspire sustainability, but only if the art was made correctly.
3. The third question inquired which material should be used to create the art piece. There was a variety of answers ranging from recycled computer parts, to plastic bottles, to wood. A couple participants were adamant that the artwork should include living components to inspire sustainability.

4. The fourth question asked participants if they would like the art to be interactive. The majority (63.6%) said that they would like interactive art. About thirty-three percent said they would not prefer interactive art. The remainder were unsure.
5. The fifth question addresses the lifetime of the proposed art. Fifty-nine percent of participants said the art should be periodically changed. Thirty-six percent said the art should be permanent. Five percent were unsure.
6. The final question addressed our idea for interactive art. It consists of a recycled bicycle coupled with a dynamometer (electrical power generator). The bicycle would be arranged in a stationary position that allows students to pedal, generate electricity, and charge their electronic devices. Seventy percent of respondents thought it was a good idea, seven percent were neutral, eighteen percent thought it was a bad idea, and five percent preferred using solar power to charge electronic devices.

2.3 Discussion

2.3.1 Ideas on how the art could inspire sustainability:

An interesting possibility for the art piece would be to have "aesthetics that will teach people about the value of nature and the possible symbiotic relationship between culture, nature and design" (Thayer, 1976). This concept could be achieved by mimicking nature. For example, Japanese scientists have created solar cells that are made from an extract of shiso leaves (Kumara, 2005). This type of solar cell could be incorporated into the proposed art.

A company claims to make solar panels in the shape of a leaf (Greendix, 2010). These leaf shaped solar panels could be integrated into the new SUB. The obvious use would be to create an artificial tree out of recycled materials and use the solar panels as leaves on the tree. The electricity generated could directly charge students' handheld devices or send electricity into the power grid.

2.3.2 Periodic art could create jobs for UBC students:

An idea for involving students in designing the art would be to have a contest showcasing sustainable art created by students. This idea has already been implemented at the University of Alabama. They asked students to create an art piece from recycled materials. Afterwards, they had a fair that allowed attendants to vote on their favourite art

piece. The winners received scholarships for art supplies. The recycled artwork was then auctioned off. (“Green fair”, 2009)

If the art were to be changed periodically, a similar scheme could be implemented at UBC. For instance, making recycled art could be incorporated into the syllabus of an art class. The student that creates the most aesthetically pleasing piece would have their work featured in the new SUB.

3.0 ECONOMICAL ASPECTS

In terms of the economic aspect of an interactive art, we do not expect to the art piece to generate profit for the new SUB. The price of the message delivered by an art piece cannot be justified in economic terms. However, it is possible to minimize the cost of creating the art piece. Meanwhile, minimizing the cost of the art can also have a greater effect when trying to broadcast the idea of sustainability. The objective of this section is to discuss the possibility of reducing cost and the options of alternatives.

3.1 Expectation vs. Reality

In the survey that we did on Nov 10th, 2011, we asked the question on how much should UBC spend on an inspiring art piece made from recycled materials? The median of the answer was around $2750. Most people had positive attitudes towards money being spent on art made from recycled materials. However, 10% of people surveyed believe that UBC should spend less than $50 on the art.

In order to evaluate the possibility of implementing the art within our expectation, we researched the price for outsourcing the project to a professional multimedia designer. It seems to be a very hard task to determine how much money is needed on outsourcing art design. There are two major costs of an art design project. First, what is the labour cost for the designer? If we calculate based on hours of labour, what would be the reasonable pay and given hours for an art project? Second, art designers have different prices for different usage scenarios. The longer the art is going to be used, the higher the price. The price is even higher if it is in a buyout scenario. See Table 1 below.

Scenario	Details	Price
Presentation Only	2-3 initial pencil sketches shown, one chosen to be created as final art. The client may request up to two rounds of minor revision. Additional revisions after this point will be billed at $250/hr. If the client chooses to not move forward after pencils are presented, a kill fee of $3500 will be paid for completion of sketches.	$7000
Usage Scenario1	The client may use the artwork for in magazine and	+$5000

	newspaper ads a period of 1 year	
Usage Scenario2	The client may use the artwork in all print media for a period of 1 year.	+$7500
Usage Scenario3	The client may use the artwork in all print and online media for a period of 1 year.	+$10000
Usage Scenario4	The client may use the artwork in all print media, all online media, and broadcast media for a period of 1 year.	+$14000
Buyout	The client may use the artwork in all media including print, online, and broadcast in perpetuity.	+$25000

Table 1

(J. Hische, 2011)

3.2 Designs by Students

Obviously the cost of outsourcing an art project is higher than most people's expectation. Moreover, our proposal is seriously considering having the art to be renewed periodically. If the art were to be changed every year, the cost of the interactive art would be a heavy burden to the building`s operating budget. However, we could eliminate the expensive design cost to almost zero. We suggest that we can implant the art project within an art course at UBC. This could be a positive experience for UBC students.

3.3 Material Cost

The materials that are used to compose the interactive art display could also be expensive. While we were generating ideas for interactive art, we thought about converting a bicycle into a mobile device charger. Using the bicycle power generator as an example, the cost of brand new parts can be higher than what people expect on an art display.

Since it's an art project that is solely to educate people about sustainability, we have to aim for using materials that are eco-friendly. There are three different ways to make a project sustainable: reducing parts that are going to be used, using materials that are recycled, and reusing the materials that are available. Reducing is definitely the best way to minimize the cost of an art project. Moreover, once we have to build the design, local reusable parts are preferred compared to recycled material. The biggest advantage of reusable material is that it has lower

cost because it does not require to be reprocessed. Moreover, local reusable parts can eliminate the cost of shipping.

4.0 ENVIRONMENTAL IMPACTS

For most foreseeable iterations of the art project, the environmental impact will likely not be positive, but can be held mostly neutral depending on which sort of materials the piece is to be made out of: new or recycled/reprocessed materials, or reused materials (reused materials being products that have reached the end of their lifetime, and are ready to be scrapped).

4.1 New or Recycled/Reprocessed Materials

If the piece is to be made of new or recycled materials from a factory, investigation should be done as to the manufacturing and transportation impacts. A product that is manufactured close to UBC will have less impact with respect to transportation, though the same product could also be made elsewhere with less impact due to manufacturing, and shipped to UBC with less total impact than the same product manufactured here. Investigation should also be done regarding comparative manufacturing impacts between new materials and the equivalent reprocessed material, since some processes are much more energy intensive than others. Whether new or reprocessed materials are used, the environmental impact will likely be negative, since the product has to be manufactured or reprocessed in the first place.

4.2 Reused Materials

Reused materials would have little to no environmental impact, and in fact it could be said that they would have positive impact in keeping some things out of landfills, or incurring more environmental costs for disposal. The closer these materials are to their final destination, the better, since the only environmental impact for these materials would be due to transportation, and possibly assembly, depending on what the material is in question (e.g. metal might require welding). An example of a reused material that would have a possible positive environmental impact is old electronics parts. All around the UBC Vancouver campus there are piles of old computers and electronics which are no longer realistically usable, since they are at least a decade out of date, waiting to be disposed of. If the art piece is made on campus out of these materials, then the environmental cost of manufacturing materials would be zero since the products have already lived out their originally intended lifetime, the cost of transport could be zero if the parts are transported by hand, and these electronic parts which are notorious for containing many metals, some of which are dangerous, such as cadmium, lead, mercury,

antimony, silver, chromium, zinc, tin, and copper would be kept out of the disposal cycle for an amount of time, depending on how long the piece is kept together (Herat, 2007).

5.0 CONCLUSION AND RECOMMENDATIONS

Due to the likely negative economic impact, and possibly neutral environmental impact, the social aspect has been taken into larger consideration for this project. From student responses to surveys, it seems that in general the idea of an art piece that is interactive and possibly useful in some way is a popular idea. Therefore the recommendation is that the art piece should be implemented, be interactive, may be used for a function, and changed periodically. However, in an effort to minimize costs as well as gain more student involvement, the students should create the piece in some way, whether though design, building, or both. Once the piece has reached its time to be changed, it could be auctioned, or displayed elsewhere outside of the SUB. To minimize or have positive environmental impact as well as promote the idea of reuse, the piece should be made out of old products or scrap materials that have reached the end of their useful lifetime, and, if possible, found locally at UBC as this would also lower the economic cost of materials.

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Appendix A: Survey Results

Q1	Q2	Q3	Q4	Q5	Q6
10000	YES	Cardboard	NO	Periodic	Interesting
5000	YES	Milk carton/can	YES	Periodic	Awesome
3000	NO	Coil/1000 NRG	YES	Permanent	Depends on Costs
	YES	Bottles/Cans	NO	Periodic	Useful
0	YES	Anuything Old	NO	Periodic	Cool
0	YES	Recycled Material from Campus	NO	Periodic	Cool
	YES	Bottles/Cans	YES	Permanent	Not Cool
10000	NO	Cans	YES	Periodic	Cool
2000	Could be	Organic	NO	Periodic	Awesome
2500	YES	Recycled Material from Campus	YES	Permanent	Tired
1000	YES	Ocean Trash	NO	Permanent	Cool
4000	YES	Not Bottles	YES	Periodic	Cool
500	YES	Cans	NO	Periodic	Cool
	YES	No	YES	Permanent	Not Cool
20000	YES	Recycled Computer/Parts			Good/Like the Idea
	NO	NO			
9000	YES	Aluminum	YES	Permanent	Like it
2000	NO	Plastic Bottles	YES	Periodic	Cool
7000	NO	Recycled Material from Campus	YES	Periodic	Not Cool
3000	YES		YES	Periodic	Cool
5000	YES	Whole Build Should be Made from Recycled	NO	Permanent	Cool
50	YES	Wood	YES	Periodic	Great
1000	YES	Wood	YES	Permanent	Not Cool
210000	YES	Reclaimed	YES	Permanent	Yes
3000	NO	Eco-Friendly	NO	Permanent	Cool
1000	NO	Recycled Material	YES	Permanent	Great idea but may not be use
	YES	Composible	NO	Periodic	OK, but wouldn't use it
200	YES	Recycled Material	NO	Permanent	Cool
1000	YES		YES	Periodic	Yes
2100	YES	Related to School	NO	Permanent	Yes
6000	YES	Recycled Material	YES	Periodic	Good/Like the Idea
Not very much	YES	No Idea	NO	Permanent	Waste of Space
3000	YES	Recycled Material	YES	Permanent	Yes
4500	YES	Recycled Material	YES	Periodic	Yes
3000	YES	Recycled Material	YES	Periodic	Yes
0	NO	Recycled Material	YES	Permanent	Yes
3000	NO	Wood	NO	Periodic	Not Cool
500	YES	Variety	YES	Periodic	Not Apealing
2000	YES	Recycled Material	YES	Periodic	Yes
500	YES	Recycled Material	YES	Periodic	Yes
3000	NO	Recycled Material	YES	Periodic	Awesome
10000	NO	Recycled Material	YES	Periodic	Solar Power might be better
2000	YES	Recycled Material	YES	Periodic	Solar Power might be better
2000	YES	Anything	YES	Periodic	Cool

LEGEND: Q1. How much should UBC spend on the inspiring art piece? Q2. Is art an effective medium to inspire sustainability? Q3. Any ideas on what the art piece should be made from? Q4. Would you prefer an interactive artwork as opposed to traditional art? Q5. Should the art be permanent or periodically changed? Q6. What are your thoughts on a stationary bicycle that could generate electricity to charge your phone?