

UBC Social Ecological Economic Development Studies (SEEDS) Sustainability Program

Student Research Report

Green Depot: Empowering the UBC Community through Textile Upcycling

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Executive Summary

The UBC student team worked together with the UNA Green Depot and Framework to establish a long-term sustainability project. A total of \$1162.50 was secured via grants for hosting community textile upcycling events at the Wesbrook Community Centre. These events entail fixing used clothing by using recycled textiles. The pilot event takes place on Apr. 27th, 2019, during the community's Earth Day celebration. The funding will cover the cost of two events, with the second event anticipated to take place at the start of September. During the promotion phase of the first event, a group of seniors has expressed their interest and plans on taking over organization of this project as "sewing experts" during these events. This involvement of the seniors would decrease the cost of hiring sewing professionals during each event. The engagement of the seniors shows a level of empowerment that will continue to impact the community even after the timeline of the student team's work term. A tracking system involving a survey was also created for the Green Depot for better in-house tracking of the amount of waste diverted from landfills.

I. BACKGROUND INFORMATION

The Green Depot is a community recycling centre located at the Wesbrook Community Centre in Wesbrook Village. The recycling services are provided free-of-charge to the community members as well as UBC faculty, staff, and students. The Green Depot is operated by the University Neighbourhoods Association (UNA), and its day-to-day operations are 100% volunteer-run. Waste accepted at the Green Depot includes household electronics, clothing & textiles, flexible plastics, foam packing blocks, batteries, carbon monoxide & smoke alarms, ink cartridges, and light bulbs.



Figure 1: The location of the Green Depot in relation to the University of British Columbia. The Wesbrook Place/Village on map is the community that the Green Depot is situated in. Dashed lines indicate UBC district geographic boundaries. Image adapted from: <https://www.myuna.ca/about/> (Edited using the Preview app on MacOS)

As of January 2019, the UBC Social Ecological Economic Development Studies (SEEDS) program created a partnership between the Green Depot and our student team. Our goal is to assess the current operations of the Green Depot and evaluate whether or not it is meeting the current demands of the community and maximizing its impact on diverting waste from landfills.

The student team began their needs assessment by visiting their facility and evaluating their current output methods for the recycled items. The UNA currently pays a well-established service provider (Waste Control Services) for a monthly removal of most plastic and electronic waste. The Green Depot partnership with PosAbilities is coming to an end in light of the new municipal decision to remove clothing donation bins across Vancouver (Carrigg, 2019). This decision limits PosAbilities' operating capacity and they can no longer offer pick-up services for the donated clothing at the Green Depot. With the clothing bins overflowing, this was the main issue that needed to be addressed.

Another concern that was identified was the lack of an adequate tracking system for the waste that arrives at the facility. Their current metric for measuring waste is based on the total weight of waste diverted from the landfill. Although efficient, this system offers no insight into what items the facility is receiving, and the relative weight of each item category. Furthermore, electronics and textiles that arrive at the Green Depot are not tracked at all as they are not handled by the Waste Control Services, but rather Free Geek. A more precise method of tracking is necessary for the collection of meaningful data that could benefit the UNA's management decisions in the future.

Finally, there is an opportunity for the Green Depot to expand its outreach past the Wesbrook Village, and extend more into the UBC community. The average number of all Green Depot users per day last year was 3.3, with only 12% UBC faculty/staff/student (data provided by UNA). Although the UBC campus has its own waste control services operated by Building Operations, the Green Depot offers a wider range of accepted items, and has an accessible drop-off location.

II. PROBLEM POSED AND RESEARCH QUESTION

The Green Depot's mission is based on the wicked problem of recycling waste, as there are currently no definitive formulation for the problem. The creation of waste is prevalent in modern practices. Moreover, the overflow of wasted materials arriving at the depot can not be localised to a particular point in the network. It is a consequence of emergence occurring at different points in the system, having social, economic and ecological aspects.

Waste is a societal problem that emerges from individual behaviour. The Green Depot is first and foremost dealing with the social aspects of waste within the community. For society to go zero-waste, a drastic paradigm shift is necessary. But in doing so, there will be economic strain to develop completely reusable everyday items. Until then, the Green Depot's hope is to raise social awareness and increase its influence so that it can educate the public as much as possible. The problem has ecological implications as well. In Canada, landfill sites account for 38% of the total methane emissions (RCBC, 2018). The Green Depot is trying to find solutions to redistribute waste in a way that minimizes its ecological footprint. For example, broken electronics are given a second life through the collaboration with the local tech store FreeGeek. The diversion of waste from landfills will decrease the community's ecological footprint. Collaborating with local stores rather than further establishments also reduces the CO₂ emissions linked to transportation. Finding 'ideal' solutions is never straightforward. A systemic view, like for all wicked problems, has to be adopted to evaluate the actions of the Green Depot. In order to maximize the impact of the Green Depot, we decided to adopt a 2-pronged approach to address issues at different levels of the system. The student team established a waste tracking system that will soon be implemented, and organized events aimed at empowering the community via textile

upcycling.

III. RESEARCH AND METHODS

Tracking System

Minimal tracking is currently being done by Waste Control Services (WCS) and consists only of weighing the total amount of items diverted from the landfill, not including clothes and electronics. Furthermore, users are currently being tracked through hand written surveys, answering only whether they are a UNA member, UBC student, faculty or staff. The current method is lackluster and does not encompass all the items that the Green Depot receives. One of our project objectives was to establish the current Green Depot usage and impact. This couldn't be done with their current tracking system.

A recycling strategy project developed for the city of London in Canada, stated that monitoring the waste that was being recycled was a key component for their strategy (City of London, Canada, 2014). Their monitoring system included a measure of the weight and volume of the total waste recycled, the weight and volume of the waste recycled by category, the weight and composition of items being shipped to landfills, as well as tracking the call/complaints received from customers, in order to improve customer services (City of London, Canada, 2014). Due to the limited number of volunteers at the Green Depot, we considered that measuring the volume and composition of items in each category was beyond the current scope of the depot. Similarly, tracking customer satisfaction seemed complex as the Green Depot doesn't have a phone number independent of the UNA.

After consulting with project partners, the student team suggested the implementation of a digital survey to track the weight of items received as well as user demographics. The implementation of our survey is still underway. The three crucial elements for this implementation process are: a tablet with internet access, a scale (preferably digital), and the

creation of a survey. For the survey, we originally decided to use the PerfectMind online program, that allowed for user and impact tracking. However, the Green Depot does not have free access to this system as it is not affiliated with UBC. This was not a sustainable solution as the Green depot could not have modified it after the end of this project. The student team decided to create a Google Survey that offers basic means of summarising the data collected, accessible online (a requirement considering our limited storage capacity on the tablet) and is straightforward to use for volunteers without previous training. Volunteers will be tasked with filling out the weight of items per category (ie. 1.2kg of Soft Plastics) for every client visit. The client will fill out an optional section regarding their background. In addition, they will have the opportunity to opt into the Green Depot's mailing list, and apply to be a volunteer. This will hopefully create a strong client database for the Green Depot to perform impact measurements. Although statistics will not be 100% reliable, these efforts will be a major improvement to their current tracking system. The survey can be accessed using the following link: <https://bit.ly/2OXpY6p>

In order to find a tablet and scale with limited financial resources, we decided to contact one of Green Depot's community partners - FreeGeek. The Green Depot has been providing FreeGeek with used electronics for them to repair and sell. The student team requested the donation of an old iPad and scale through their online donations platform. Their decision process is still pending. If FreeGeek is unable to donate an iPad and/or a scale, we can look into purchasing one for under \$100 from FreeGeek using the grants that the student team has secured. The only necessary features for the iPad is internet access to load the survey, and a charging port.

Community Engagement via Fix It Events

The textile and clothing industry is a growing environmental concern due to mass pollution (Dadi et al., 2017), depletion of natural resources such as water (Li et al., 2017), and excessive waste production (Yacout and Hassouna 2016, Islam et al., 2014). Global estimates predict textile consumption amounts to more than 60 billion pounds per year (Niinimäki and Hassi, 2011). Subsequent pre-consumer and post-consumer waste generation result in landfills becoming exhausted (Mair et al., 2016). According to Bick et al. (2018), Americans alone consume 3.8 billion pounds of clothing per year, approximately 85% of which ends up in the landfill.

Extensive documentation of the ecological unsustainability of current consumption patterns (Vitousek et al., 1986, Vitousek et al., 1997, Meadows et al., 1992, Wilson, 2002; Schor, 2005) has yet to be adequately addressed. According to Joung and Park-Poaps (2013) “textiles represent one of the untapped consumer commodities with strong reuse and recycling potential” (Domina and Koch, 2002). In contrast, a ‘throwaway’ fashion attitude is increasingly being adopted among consumer (Birtwistle and Moore, 2007), leading to the development of frequent clothing disposal and replacement practices (Joung and Park-Poaps, 2013). Improving the longevity of clothing is increasingly becoming recognized as the most effective means of reducing the environmental impact of the clothing industry (WRAP, 2012; Harris et al. 2016), with mending identified as a plausible solution (König, 2013; Laitala, 2015; Gwilt, 2014, Middleton, 2014; McLaren, 2015).

To address the Green Depot’s overflowing textile donation bins and encourage UNA and UBC community members to develop sustainable clothing maintenance and disposal practices, the student team has arranged a collaboration with Framework Education Society, a non-profit organization that shares the Green Depot’s mission to divert textile waste from the landfill. The two organizations will tentatively collaborate on quarterly Fix-It events.

Frameworkq's Fix-It events resemble communal mending workshops first started in the Netherlands in 2012, designed to address the growing concern over increasing post-consumer waste generation (Durrani, 2018). Durrani (2018) defines communal mending workshops as, "free spaces to people where they can come and either utilize the provided material to mend garments, learn how to mend first-hand or get assistance in their mends while working together with expert menders". Durrani's (2018) review of communal mending workshops found the approach an effective means of improving consumer disposal practices by overcoming social and time-cost-skill barriers associated with garment repair practices. Communal workshops provide direction for changing social paradigms, necessary to offset the wasteful culture established by the fast fashion industry and stimulate environmentally responsible behaviour (Kilbourne et al., 2002). Repairing garments allows consumers to reduce waste production by increasing clothing longevity, effectively challenging the culture of overconsumption and short clothing lifespan characteristic of the fast fashion industry (Harris et al. 2016).

Providing information regarding the environment impact of unsustainable practices alone are not enough to develop long-term sustainable habits (Abrahamse et al. 2005; Osbaldiston and Schott 2012; Harris et al. 2016) due to the attitude-behaviour gap prevalent in individuals with pro-environmental perspectives (Auger and Devinney 2007; Gatersleben, Steg, and Vlek 2002; Kollmuss and Agyeman 2002; Young et al. 2010). The social component of communal mending workshops are necessary to change participants' disposal habits (Abrahamse and Steg 2013). According to White (2019), "sustainable behaviors often require collective as opposed to individual action (Bamberg, Rees, and Seebauer 2015)". Durrabi (2018) found social factors improved participants' learning (Gherardi and Perrotta 2014, Lave 1998), in part attributed to the feedback received from fellow participant, which

in itself encourages sustainable habit formation (White 2019).

The Fix-It events will be held at the Wesbrook Community Center, around the corner from the location of the Green Depot. Having a fixed location builds the regularity of mending practices and is thus vital for the development of sustainable habits (Fenwick, 2015). The event's conveniently close proximity, is also expected to encourage future use of the Green Depot's textile disposal services by developing the participants' familiarity with the facility (Koch and Domina, 1999; Joung and Park-Poaps, 2013). The events will include two sewing experts and will otherwise be run by the Green Depot's existing volunteers. The first event will be combined with the UNA's Earth Day celebration, maximizing exposure to attending community members. Please see the timeline of the project here:

<https://bit.ly/2Z0F5kc>

Grant Applications for Fix-It Events

- SEC

The UBC Student Environment Centre (SEC) is a student organization that provides grants for sustainability projects on campus. An application was sent in with the description of our project, along with the budget for the Fix-It Event. The organization responded positively to our project idea, but was concerned about the distance from the Nest of our first event (held at the Wesbrook Community Center). After an in-person meeting between the SEC, our student team, as well as our community partner at the Green Depot, we were able to secure \$600.00 for our pilot event. The SEC has also requested for subsequent events to be held on campus (most likely in the AMS Nest) to increase student accessibility.

- AMS Sustainability

The sustainability department at the UBC Alma Mater Society offers Student Initiative Grants that aim to financially support student-led sustainability initiatives on

campus and in the community. An application was sent in with the description of our project, along with the budget for the Fix-It Event. After a 3-week process, \$562.50 was granted by the AMS Funds Committee.

Overall, a total amount of \$1162.50 has been secured for the project. This amount will not only cover the fees for the first event, but also ensures the continuity of the idea by funding a second event as well. If the events are successful, the student team hopes to secure a sustainable source of funding from the two aforementioned organizations for future years. Frameworkq has already expressed their commitment to continue providing their services for us and decrease their prices once an established annual timeline is finalized. A breakdown of the event budget can be seen at this link: <https://bit.ly/2U3ct68>

IV. PROJECT OUTCOMES

The first Fix-It Event is scheduled to take place during the Earth Day celebration hosted by the UNA. The community partner believed that this would attract the most community members to the event. With \$1162.50 secured, we are able to host a second event within 3-4 months. This would allow us to make adjustments to maximize the effectiveness of the initiative. Our community partner and SEEDS Coordinator have both expressed gratitude for the efforts of the student team and all parties are looking forward to the event. Textile waste has yet to be addressed at UBC and this event will be the first of its kind to be hosted in the community. The two key performance indicators that will be tracked are the attendance of the event, and the weight of clothing repaired. During the event, the student team will also aim to promote the purpose of the Green Depot through handing out pamphlets and recycled grocery bags (provided by the Green Depot).

V. DISCUSSION

The mission for this CBEL project was to devise a solution to maximize the impact of the Green Depot. After conducting a thorough needs assessment, the student team decided to address the overflowing bin of clothing and developing an effective tracking system. Through our Fix-It Events and the implementation of our survey, we hope to engage both the Wesbrook Community as well as the UBC campus community. Throughout the duration of this project, the student team learned more about how the Green Depot functions on a day-to-day basis, and discovered some areas worth discussing:

Volunteers

Relying on volunteers comes with a number of challenges. It restricts the potential scope of the Green Depot, makes the impact measurement less reliable thereby making it harder to secure funding. Most importantly, it comes with the constant uncertainty and stress associated with searching for reliable volunteers. Although most volunteers come from the adjacent high school (University Hill Secondary), their turnover rate is high and the hours of operations change with the after-school availability of the students. In order to provide a reliable service, a set schedule needs to be established. This can be achieved through working with the school administration to develop a set schedule for the volunteers to come in everyday, regardless of the school term. As an incentive for students, the school can offer school credits for this after-school program.

More Collaborations with On-Campus Organizations

The student team intends on extending the reach of the Green Depot by raising awareness through Fix-It events. However, other incentives could be put in place to bring people to the depot. A membership/stamp card, for example, could be implemented with a reward once a client dropped a certain amount of items. Moreover, finding other collaborative partners could be beneficial. A number of items (such as decorative items) are being dropped

off despite not being part of the “accepted items” list. Finding a way to collaborate with AMS Free Store or another store to give these away, and to extend the reach, could be an option.

VI CONCLUSION

A total of \$1162.50 in funding was secured for Fix-It events. The continuity of this project has been ensured through the funding as well as the engagement of the seniors of the community. The student team plans on continuing to help plan and organize future Fix-It events and applying to grants whenever available to provide consistent funding for the project. The tracking system will improve the Green Depot’s abilities to analyze their user demographic, as well as their impact on reducing landfill waste.

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