Best Practices for Zero Waste at UBC Catered Events

Camille Gallet

University of British Columbia

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By Camille Gallet

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Table of Contents

Executive summary

The main objective of this report is to assess the barriers and opportunities in UBC current catering practices directed towards recommendations as means of achieving Zero Waste events. The proposed recommendations include:

- *Products* :"Bring your own Mug" and all compost event solutions should be developed in order to resolve the products misplacement and contamination of recyclable waste. Economic venue for UBC Food Services is associated with selling proposed products. I have designed a list of only compost items as an alternative to the current heterogeneous ones as a catering event solution, where homogenous waste, as literature review states, shows best results.

- *Infrastructure* : Harmonization and non-permanent bins should be introduced after assessing the current waste infrastructure availability at UBC catering events. While harmonization is in process, non-permanent bins should be an option in every single building to resolve the placement issue of appropriate bins. Furthermore they should be available for order from the Wescadia website, during the order process for the ease of all stakeholders, if not already obtainable from the specific building.

- *Communication:* A recurrent barrier to the implementation of more sustainable practices at catering events was the lack of education coming from all stakeholders and personnel involved in the process (clients, event organizers, direct and indirect staff). In this regard, a video from the Sustainability office should be made to engage all parties in some interactive manner and rewards, to address disposal techniques for students, organizers and all parties at stakes. Additionally a better application of sustainability attributes down through the chain or orders to assure the presence of the "green sheet," breakdown of waste disposal, as well as its update. The third solution to increase education, incentive and aggregate waste involves an "inter-faculty sustainability competition." This would generate excitement with Zero Waste party, dinner reward for the most garbage free faculty, according to building garbage weight per month.

- *Process :* The process of waste management of UBC showed deep complexities, which impede in the goal for waste reduction simplicity. Here two main solutions would come in handy: a full website redesign including all other related recommendations option availability, as well as a green representative. The latter would be a designated person acting as a consultant helping to maintain best practices while educating students, event organizer and staff through sessions and during catering events. Moreover, the green representative would act as a mascot for each faculty if linked to previous recommendation.

All recommendations aim at an easy application of efficient solutions which would ultimately raise the issue at hand's importance and thus greater involvement and incentives from all parties.

Introduction

This project was conducted over a 4-month course at UBC labeled Geography 419 Research in Environmental Geography in partnership with the UBC SEEDS program (Social, Ecological, Economic, Development Studies). The ultimate objective of this study, solicited by UBC SEEDS was to achieve 100% composting and recycling at UBC venues by grasping the barriers and opportunities of the current catering practices. The results of the research undertaken, done through participant and naturalistic observation and interviews permitted constructive recommendations for UBC Food Services.

In this respect, a preliminary literature review was undertaken focusing on three branches of the topic at hand: packaging, behavioral aspects and an exploration of colloquially "impermanent" events at catering events. Following this a more practical approach allowed for an on-site observation of five different catering events, varying in size, location and type to understand the barriers that UBC faces for implementation of Zero Waste.

The results of this study demonstrate areas poorly performing towards the common goal whilst underlying reasons for those persisting inadequacies. Recommendations were thus broken down into four categories deemed unsuitable and needing improvement: Communication, Products, Process and Infrastructure. Those solutions are only suggestions of recurring obstacles to Zero Waste observed and are not intended to offend any stakeholder's practices, but rather aiming at a helpful amelioration of current ones. Those would align with UBC's Zero Waste Action Plan and support SHHS (Student Housing and Hospitality Services) unit-level sustainability framework, through enactments from UBC SEEDS in union with UBC Sustainability's office.

Background

As a campus aiming for Zero Waste, in a city striving for "The Greenest City" title by 2020 furthered by a more pressing banishment of all organic waste from its landfill by 2015, UBC presents leadership prospects of much global perspective.[1] According to UBC Waste Audit conducted by the campus sustainability office, the campus as of 2010 diverted 44% of its waste from the landfill.[2] While having been involved in a broad range of successful launched programs towards sustainability, such as "My waste, my responsibility" recycling program, the large-scale in-vessel composting facility, Reuse it UBC pilot program and mandating all institutional buildings to divert 75% of its construction waste. Those applications display UBC's capacity to engage in more sustainable practices, thus inferring the possibility of strategies towards Zero Waste in its catering department. However, the campus still falls behind compared to neighboring University of Victoria which, in 2011,

[1] Metro Vancouver 2014; City of Vancouver 2013
[2] UBC Sustainability 2011

diverted 64% of its waste.[3] In fact, UBC's audit still exhibits that the predominant materials going into landfills are organics, paper and plastic, with only 5% non recyclable as outlined in the chart of the composition of UBC's operational waste below in figure 1.[4] The lack of understanding of the protocols and procedures from both clients and UBC Food Services requires mitigation in catering instances, due to its improper practices to achieve the goal at hand. Ultimately, properly disposing of our waste reduces contamination, which decreases garbage in landfills, reducing toxins going into the soil, polluting our planet, with methane emissions and our essential water resource.[5] It is for those reasons that understanding barriers to waste disposal in catered events would ameliorate the overall campus's sustainability whilst acting as a pioneer in this wished Zero Waste department.

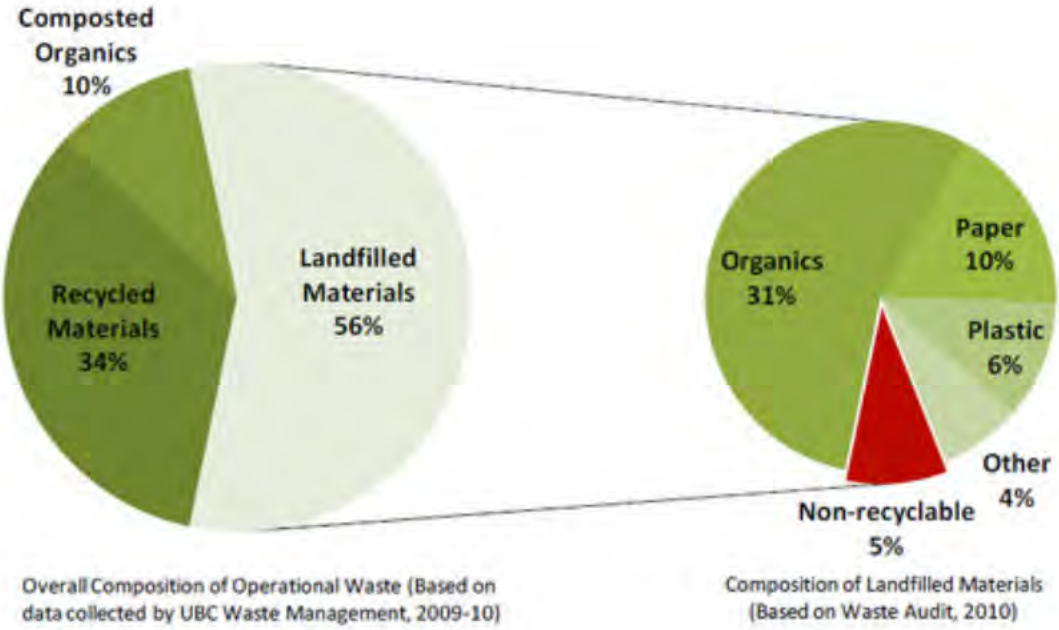


Figure 1: Source UBC Sustainability, 2011

[3] University of Victoria 2011
[4] UBC Sustainability 2011
[5] UBC Sustainability 2014

In order to achieve Zero Waste catering event, I engaged in the analysis of similar attempts, successful or not that if contextually applied, could bring us closer to this goal. Constant obstacles entailed in sustainable behaviors and infrastructure impedes many, however, learning from barriers, help us find solutions. To do so, a literature review, focusing on three catered events related aspects: "impermanent events," packaging and behaviors, as there is a clear lack of available information for such a specific subject. A case study will then be analyzed.

Literature Review

"Impermanent" events

"Impermanent" events are the closest equivalent to catering events as it involves, in most cases, a waste infrastructure disposal that comes and goes. As such, Tennant-Wood compared two zero waste events (The major Creek Music Festival and the Cobargo Folk Festival) to a "control" event (the Braidwood Agricultural Show), in South Wales. In this instance, measures for a minimization of waste management operations such as pre communication/education, infrastructure design/development and transport services were highlighted for correct source separation. In their article focusing on behavioral and attitudinal required changes, rather than waste reduction at its source, benefits of Zero Waste were highlighted as: simplicity, marketing, immutability, flexibility and synthesis.[6] Referring to the idea that programs employed are inept if an end disposal system is not adequate. A second example was analyzed in the context of Kovalam, India, where waste was becoming an important environmental hazard, thus solutions had to quickly emerge. In this regard, figure 2 displays the stages that Dileep associated to Zero Waste.[7]

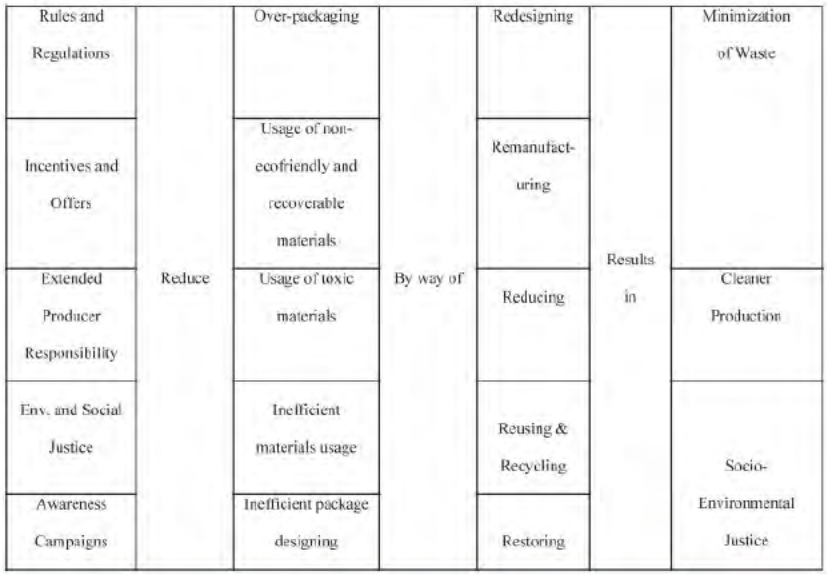


Figure 2: The essential stages to be followed for Zero Waste. Source: Dileep 2007

[6] Tennant-Wood 2013: 46-55

[7] Dileep 2007: 377-392

Packaging

Literature shows great concern with PET bottle containers recycling and labeling in a Brazilian context in Coehlo at al.'s study as they show to be extremely detrimental to the environment if not disposed of properly.[8] Their best results for appropriate disposal include reducing consumption, education and engaging industrial sectors and governments. A life cycle assessment of compostable cutlery and "homogenous" waste was done by Razzah et al. to show its implementation's benefit as reducing energy resources, greenhouse gases, waste production, eutrophication and acidification.[9] Lastly, an article by Mojo recites the advantages and importance of properly designing compostable products.[10]

Behaviors

Through various environments of hospitals and universities, existing literature shows that bin placement and labeling differs in their influence of behaviors depending on context. Moreover, there was a common appeal for incentive and awareness (such as information on where the waste goes) that influences attitudes, further shaped through social norms.[11]

<u>Applicable Lessons for UBC Catered Events Context</u>

- Pre-communication and education
- Infrastructure design, labeling, placement and development
- Transport services: who is responsible for disposal
- Product labeling (compostable, bottle containers such as plastics (#1-7))
- Biodegradable and Compostable cutlery benefits in terms of "homogenous" waste

[8] Coelho, Castro, Gobbo 2011: 291-299
[9] Razza, Fieshi, Innocenti, Bastioli 2009: 1424-1433
[10] Mojo 2008: 289-294
[11] Andrews, Gregoire, Rasmussen, Witowich 2012: 530-535; Kelly, Mason, Leiss, Ganesh 2006: 42-55; Ramayah, Lee, Lim 2012: 141-147

Case Study

An interview of Natasha Dickson currently Vice President of Operations for Vancouver Film studios was conducted in terms of their Zero Waste implementation in their small scale office and for tenants on bigger scale set. While the small-scale execution of 100% recycling and composting in their office was successful, the larger scale dealing with over 200 people at once was trickier. For both instances, their main contributor was a hired consultant from the Keep It Green recycling Company. Natasha further gave her staff a surprise aspect in which she removed all garbage cans from offices prompting positive results still to date. [12]

Barriers

- Resources
- Education, as Dickson mentions " ideally there should be someone in charge of [helping proper waste disposal] because soon they're not going to have a choice."[13]
- Incentive, as Dickson states that there is " a need to understand the importance and it needs to be easy and efficient."[14]
- Location of bin placement and small vs large context

Benefits

- Repercussions at home level for all members of the family, especially children, which indirectly educates, and can spur passion and drive incentive.
- Saved money from a considerable decrease of garbage "tips."

<u>Applicable Lessons for UBC Catered Events Context</u>

- "Surprise" effect
- Consultant

[12] Natasha Dickson Personal, 19th February 2014, Interview
[13] Ibid
[14] Ibid

System in place: Waste disposal process, Infrastructure Availability and Orders

Waste Disposal Process

The current scheme for waste management at UBC involves several stakeholders rendering a complex process. UBC Building Operations regulates UBC Custodial and municipal UBC Waste Management. Depending on the location of specific catered events (rooms versus atriums) either event organizers or UBC Custodial will dispose of the leftover waste. Ultimately UBC Custodial brings outside the building the waste accumulated inside. UBC Waste Management will then drive compost to the in vessel composting facility on South Campus, recyclables are driven to specific companies around the mainland and garbage and non-recyclables are sent to Vancouver Transfer Station. [15]

Infrastructure Availability

The waste disposal infrastructure on campus highly varies across buildings. To fix the very heterogeneous system of labeling/pictures/symbols/colors/shape, which is a source of confusion for students eventually rising garbage output due to contamination, a 4 bin system shown in figure 2 is currently being implemented all around campus, as stated by Bud Fraser, Water and Zero Waste engineer within UBC Campus Sustainability.[16] However, because most 4 bin systems are put in place in big spaces such as halls, libraries and first floor of most buildings; single rooms, potential catering locations might not be accommodated with proper waste disposal. In this instance, we observe two outcomes:

Figure 3: UBC Sort it Out 4 bins system

- The event organizer lacks incentive/ time to find alternate options thus most compostable and recyclable waste ends in garbage.
- A form can be filled through UBC Plant Operations, Waste Management Division, which takes a week to process, to order additional bins for compost or recycling.[17]

[15] UBC Building Operations 2014; Liska Richer. 14th February 2014. Personal Communication
[16] Bud Fraser. 21st February 2014. Personal Communication
[17] UBC Plant Operations, Waste Management Division 2008

Orders

To further comprehend the barriers of Zero Waste, an assessment of catering orders through the Wescadia Website was done. Firstly, the website lacks any appropriate information about packaging or food containers, as to further impede pictures are rarely available, as shown in figure 3.[18] Additionally, we observe a lack of engaging sustainable options for users, with only a comment box for special requests. Extra bin ordering, as mentioned above, is done through a different website, which impedes in Zero Waste ease as most organizers tend to "just order online as fast as possible," rather than take time to set properly in advance for post consumerism waste. [19]

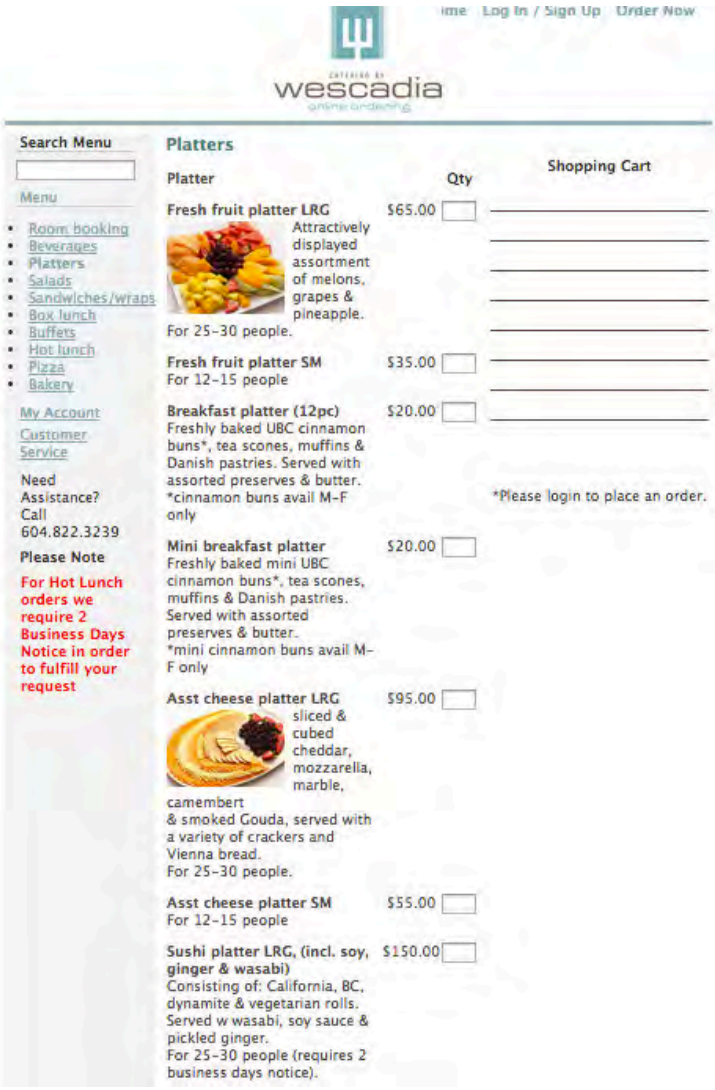


Figure 4: Wescadia ordering website excerpt (2 images shown out of 7 meals presented) Source: Wescadia

[18] Wescadia Catering Website
[19] Anonymous event organizer March 10th 2014. Personal Communication

Participant and Naturalistic Observation

As assigned by the SEEDS's expectations for this project I attended 4 different catering events, varying in type, size and location. The events took place in the Hong Kong Lounge of the Law Building, the Atrium of the Forestry Building, the Group Study Room in Totem's Common Block, Totem's Common Block main conference room and the Hugh Dempster Pavilion, as displayed in the figure 5 below.

Event/ Proprieties	Number of people	Room vs. Atrium	Bins available	Are the bins labeled?	Recyclable or compostable cups/cutlery/ plates	Green Sheets
Law	250	Atrium	4G, 2R, 2C	Yes, but 3 bins system is poor. (G, R, C)	Yes	No
Forestry	65	Atrium	2G, 1C, 1R, 1P	Yes, but 1G is not	Yes	Yes, once asked
Totem Study Room	27	Room	1G	No	Yes	No
Totem Conference room	100	Room	1G	No	Yes	No
Hugh Dempster	140	Room	1G	No	Yes	No

Figure 5: Events attended description (G= Garbage, C=Compost, R = Recycling)

As mentioned in the above section concerning the current system, the infrastructure is not always adapted to the catering events. In fact, as seen in the last three events of the table, all only had a garbage bin available, those happened to be located in rooms. In all three cases, none of the clients stepped outside of the room to dispose of their recyclable/ compostable cutlery, plates or cups, and where most times only a handful of items were non-recyclable. As can be seen from the figures 6, 7 and 8 of all three events below, there is an undeniable inadequacy from both sides of the balance, patrons and organizers. Lacking infrastructure and behaviors influence each other negatively leading to a garbage output that could be avoided were these variables ameliorated.

On the other hand, the two top rows of Figure 5 were much more open events, in which a vast variety of bins were available. The presence of so many options left, in the case of the Forestry event, people to automatically dispose of their waste at the nearest garbage bin, regardless of the 4 bins system a few meters away. However, even if clients would direct themselves to the correct bin, heterogeneous items: plastic cutlery, paper and plastic cups and paper plates, confused their understanding of where goes what. In the case of the Law

event, not only was the bin system poorly labeled due to the absence of example, but the involvement of indirect staff during the event led to improper practices towards Zero Waste. In fact, the Hong Kong Lounge neighbors a small café inside the Law Building, which during the event shared the same 3-bin system. I myself approached the bins to dispose of a recyclable cup to which a staff member employed at the café indicated me to throw in compost due to recycling being full.

Moreover, as can be seen in the last column of Figure 5, there is a clear lack of implementation of the Green Sheet, which is supposed to be placed at each event in hope of helping consumers to properly dispose of their waste. In fact this sheet provides a breakdown of the elements to throw in recycling, compost, garbage or paper. This sheet was only provided to me once, only after asking for it.

Figure 7: Totem Park Study Room Event

Figure 6: Totem Park Conference Room

Figure 8: Hugh Dempster Event

At this point of the study, several recurring misplaced and poorly used products were identifiable. Alternatives to those items will be listed under the "Products" recommendation:

- Milk cartons: According to Bud Fraser, milk cartons will soon be recyclable, however as of now UBC Waste Management considers it garbage, while it is not completely banned from Vancouver, making its disposal complex and often misplaced. [20]

- Sandwich toothpicks: Due to health hazards, sandwich toothpicks are required to have a visible colored tape on top; this addition makes the product garbage. However, interactions with patrons led me to believe that very few are aware of this, thus often misplacing it into compost.[21]

- Chopsticks and stir sticks: If left treated, they are compostable, however, few can make the difference, due to lack of labeling, resulting in wrongly spread assumption that these items are compostable. [22]

- Plastic Tongs: Being found in all attended events, and mentioned by Hugh Dempster event organizer, plastic tongs are not often reused due to their cleaning time constraints, thus creating more avoidable garbage. [23]

- Cardboard Food Tray: Hugh Dempster event organizer also mentioned carboard as problematic, due, again to time constraints for proper disposal if cardboard bin is located to far from the event, especially in room events.

Lessons learned from UBC catered events waste management practices

- Lack of knowledge from clients/staff (directly or not involved)/organizers
- Lack of application of "Green Sheet"
- Complexity of sustainability practices
- Lack of incentive
- Lack of time from organizers
- Lack of adaptable infrastructure

[20] Bud Fraser March 14th 2014. Personal Communication; MetroVancouver 2013
[21] Liska Richer 14th February 2014. Personal Communication
[22] MetroVancouver closing the loop
[23] Anonymous March 13th 2014. Personal Communication

According to a vast range of literature background review, the Vancouver film studio case study, the evaluation of 5 catering events by means of participant and naturalistic observations, conversations with clients and interviews with organizers led to the following recommendations for achieving a successful Zero Waste implementation for all UBC catered events: **Products, Infrastructure, Process, Communication**.

Products

#BYOM: "Bring your own mug" is nothing new, however this is often not an offered option for catered events at UBC, as it is not included on the Wescadia website as a "reminder" of sustainable availability practices. Moreover, if an event organizer wishes, this could be a marketing venue for Wescadia to sell their own cups/mugs, in cases where the event is formal and all patrons wish to have the same looking products. The labeling of such cups could provide advertising for Wescadia's sustainable events. Inevitably, through marketing or deposits, economic profits will benefit UBC Food Services.

Homogeneity (Compost>Recycling): According to all the lessons observed throughout this study, as stated by Razza et al., homogeneity of waste renders a Zero Waste goal more accessible.[24] For patrons, event organizers and custodial staff, homogeneity equals simplicity in terms of efforts for bin installation, number of post event bins, and complexity of what goes where. Homogeneity would furthermore lead to an absence of contamination, which is most commonly found in recycling bins, due to liquids and food waste.[25] Alternative suggestions for commonly misplaced and all non-compostables were thus inferred, as explained below and pictured in figure 9.

- PET Bottles + Juice/ pop cans + Milk cartons/ Milk condiment portion cups: Replaceable with bulk of juice/water/milk would decrease the avoidable garbage and recyclable waste. BYOM or compostable cups would suffice for combination use
- Plastic cutlery/plates/cups: Compostable material, such as polylactic acid (plastic #7) made from cornstarch easily available, such as Spudware items: reusable, washable and just as sturdy as plastic utensils.[26] Cheaper option is untreated wood, which is compostable. Appropriate labeling would educate patrons about compostable "plastic looking" options, #7, which is often unknown.[27]
- Cardboard Food Trays/ Saran wraps/ Tray Wraps: Replaceable by re-usable food trays, such as that depicted in figure 9, closing with magnets. The material would adhere food safety criteria, sustain high temperature dishwater, such as stainless steel, and would come for deposit from Wescadia.

[24] Razza et al. 2009: 1424-1433
[25] Clean Water Action 2011
[26] Song, Murphy, Narayan, Davies 2009; Spudware 2011
[27] Patrons 13th March 2014 Personal Communications

- Chopsticks: Chopsticks are quite a complex product to dispose of if there is a lack of knowledge/ labeling. The same compostable material suggested for cutlery, PLA, as well as bamboo chopsticks, although more costly, would in the long run benefit UBC Food Services, as Zero Waste events would attract much publicity and thus clients.
- Plastic tongs: Reasons mentioned earlier, leaves tongs to be too often thrown away. I therefore recommend the use of reusable ones, which Wescadia would gather back, with deposit, or compostable which could be discarded with food waste
- Cup Lids: Recyclable lids could be replaced with compostable lids, with PLA properties. A more radical idea would eradicate this item's availability, which would make sense, in catering context, as no transportation is required.
- Sandwich toothpicks: Although a complete eradication, as lids, would solve issues mentioned earlier, this is not a feasible option. Therefore, a proposed "cocktail" toothpick with twisted end was proposed as shown in figure 9, additionally the end could be dyed as to perpetuate the presence of a colorful end for health hazard reasons.

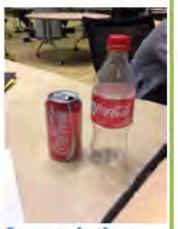
	PET Bottles/ juice&pop cans/ Milk Cartons and milk condiments	Plastic cutlery/cups/plates	Cardboard Boxes/ Saran Wrap/Tray Wraps	Chopsticks	Plastic tongs	Cup Lids	Sandwich Toothpicks
Current Items	 Source: Author  Source: Author  Source: Mytelegraph, 2008  Source: Author	  Source: Author Source: Author  Source: Starpakas, 2013	 Source: Author  Source: Author	 Source: Author	 Source: Author	 Source: OfficeProducts	 Source: Karen Shimizu, 2011
Alternative Item	 Source: Author	 Source: Thisnext, 2014  Source: Spudware, 2011	 Source: Author	 Source: Greengate, 2010	 Source: Author	 Source: BioMass Packaging, 2014	 Source: Amazon

Figure 9: Alternative Items for Homogeneity

Infrastructure

Harmonization: Although previously mentioned that all bins are currently in the process of harmonization to resemble the 4 bins system of figure 3, this does not solve their non-availability in small spaces and rooms. Furthermore, as we have seen distance plays an important role in shaping individual's behaviors of waste disposal. Thus although this harmonization of bins is necessary it needs to be followed by, as mentioned in Natasha Dickson's interview, a surprise element, as such all other garbage bins would be removed, leaving no choice for consumers but to properly dispose, leading to overall garbage reduction. [28]

Non-Permanent Bins: Such opportunities would be created in instances in which the room hosting an event does not have proper infrastructure available. Non permanent bins such as foldable boxes or paper bag would be available for order, through the catering website rather than current practices, which showed to be detrimental to achievement of Zero Waste, due to its complexity and waiting time. Non-Permanent bins could benefit Food Services through a deposit fee, or as mentioned in "Products" recommendation in BYOM, could be sold for reuse. Another alternatives would be to equip each building with a set of movable bins, as currently in trial at the Geography building.

Communication

Video: In order to promote knowledge for all parties involved in catering events, we need to broaden the aspect of communication through a viral video with participating students and a catchy element. As a suggestion, different videos could be made in which a hidden letter would be displayed, the collection of all letters, would form a word corresponding to a code for obtaining a free water bottle. Moreover, on the Wescadia order website, the video would be displayed to inform event organizers of their responsibilities and conduct for Zero Waste achievement. Ultimately reminding or informing everyone of Vancouver's forthcoming banning of all compost from landfill by 2015, would raise pressure, and thus action. [29]

"Green Sheet": There is a strong lack of implementation of this breakdown sheet of waste items, although associate director of catering and restaurant services in UBC Food Services Kevin Dueck states its presence as required.[30] Therefore a stronger enactment, through the cooperation of a green representative recommended in "Process," together with an update of the sheet is recommended. In fact, chopsticks should have better specifications, sandwich toothpicks should be included, and plastic 1-7 labeling should be described, especially #6 which is Styrofoam and thus garbage and #7 which is compostable plastic PLA.

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[28] Natasha Dickson 2014
[29] Metro Vancouver 2014
[30] Kevin Dueck. March 14th 2014. Personal Communication

Inter-Faculty Sustainability Competition App #IFSC: This recommendation aims at a campus wide involvement, where repercussions would greatly increase Zero Waste knowledge and most importantly trigger incentive. UBC Building Operations currently manages all waste on campus; however, I am looking at a proposition for each faculty's involvement in their respective assigned buildings. The application would involve UBC Custodial to record daily garbage output, for everyone to keep track of their faculty waste. Each month, the faculty with lowest amount of garbage would get entitled " Most clean (bin) faculty of the month" and rewarded with a zero waste party or dinner, pleasing all faculty staff. Creating excitement for waste reduction amongst campus would align us closer to UBC's Zero Waste Action Plan and SHHS unit-level sustainability, while ultimately, profiting UBC Building Operations through less garbage tips and more compost for Plant Operations.

Process

Website Redesign: While having analyzed the weaknesses of Wescadia ordering and having been informed by Kevin Dueck of forthcoming redesigning, I extracted recommendations for best practices to act towards sustainability at the ordering level rather than post-consumerism level.[31] This would infer updating all food pictures together with information on more precise information about containers accompanying meals and as suggested by one of the five organizers of the 5 attended catered events, a logo, such as gluten free, locally grown, vegetarian for faster assessment.[32] Moreover, several options mentioned in other recommendations sections would be included in the redesigned website such as BYOM, the video and non-permanent bin ordering which would be offered as organizers receive their invoice of confirmation of the event.

Green Representative: As seen through the Vancouver Film Studio case study, a consultant helps to properly educate, inspire and regulate operations. To help in catered events context, a consultant would educate UBC staff through hiring mandatory session, especially in terms of differentiating contaminated bins for a better initial disposal. A Green Rep would educate students through a Zero Waste "Free Food" session for first years. Organizers would work in conjunction with the consultant, learning best practices, as some still lack knowledge, as one of the organizer for Totem Study Room event stated that they were in a "room where recycling and garbage bins were available," however figure 7 taken from that same event display a single garbage can.[33] In all, the Green Representative could act as a simple consultant in all areas mentioned, but if linked to the competition idea in the "Communication" recommendation, each faculty would have a green representative, acting as a Mascot, rooting for them through communication and process guidance for all faculty members (staff/event organizers/students/UBC Custodial).

[31] Kevin Dueck 2014
[32] Anonymous March 10th 2014
[33] Ibid

Conclusions and Future Research

This project was inevitably limited by the significant time constraint of 4 months, encompassing involvement in other classes and activities. Therefore there are repercussions seen in the depth of the research. As event organizers were often busy and lacking time for a thorough interpretation of their practices and lacking resources created barriers to much qualitative analysis. More allocated time and resources could have bettered numerous areas of the study.

Another noticeable limitation was the amount of bias that was present in the study. Through participant observation, event organizers and sometimes patrons were aware of the ongoing research, thus watching their behaviors accordingly influenced by social norms. Nonetheless, the data analyzed still resulted in high lack of knowledge present.

Through the analysis of literature review, case study and current barriers of UBC practices for achieving Zero Waste, recommendations were accordingly shaped, however future research would deem beneficial. As such and out of scope relative manners for decreasing consumptions should be envisioned, from both the consumer and the producer side. Moreover, as there is a disconnect between senior management policies directed by Food Services and front house operations, an incline towards better regulations along the chain of command is required from within.

Acknowledgments

I would like to thank my professor, David Brownstein for providing great insights and guidance throughout the term. Additionally recognizing my community partner's constant involvement and eager to render the project to life. And finally I would like to acknowledge all interviewees and participants approached during this research.

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