

UBC Social Ecological Economic Development Studies (SEEDS) Sustainability Program
Student Research Report

An Examination of the Value of the Stormwater Cascades to the UBC Community
TJ Bamonte, Tess Cohen, Reem Kiran, Daniyal Shirazi, Somya Tyagi, Julia Wakeling
University of British Columbia
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AN EXAMINATION OF THE VALUE OF THE
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GEOG 371

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UBC CAMPUS AND COMMUNITY PLANNING

Dean Gregory, Campus Landscape Architect

UBC SEEDS (SOCIAL ECOLOGICAL ECONOMIC DEVELOPMENT STUDIES) SUSTAINABILITY PARTNER

Hannah Brash, Project coordinator

UBC DEPARTMENT OF GEOGRAPHY, GEOG 371 – RESEARCH STRATEGIES IN HUMAN GEOGRAPHY

Dr. Geraldine Pratt, Professor

Nicole Molinari, Teaching Assistant

Abstract

The purpose of this study is to determine the effective value attributed to the Stormwater Cascades located on the University of British Columbia (UBC) Campus by the university community. The space has suffered from a reed monoculture and subsequent infestation of invasive species, which has the potential to damage how the community views the space from an ecological and aesthetic perspective. This study makes recommendations to the feature based on primary and secondary research by conducting a thorough literature review and collecting information from an online survey, focus group, and participant observation study designed by the researchers. In doing so an assessment on the features successes and shortcomings with respect to its design goals are discussed and highlighted. This report is the first of its kind as the effectiveness of the Stormwater Cascades (SWC) as a public space on campus has not been studied previously, and so offers a unique opportunity for public consultation in regards to its future.

Data for this study was collected largely through an online survey from which more specific questions were created to facilitate productive dialogue as part of a 7 person focus group consisting of a variety of community members. Lastly a participant observation study was conducted on two days of varying weather to better understand movement and utility surrounding the space.

ABSTRACT

The results from this study suggest that although the SWC are a well-received new addition to the campus, the feature is lacking in its ability to effectively engage with the community at large, and thus not achieving its full potential of being an effective public space. The purpose of this investigation is to provide useful information to the stakeholders (UBC Campus and Community Planning and UBC SEEDS) that will support future design endeavors of the feature and others on the UBC campus.

Introduction

The University of British Columbia has undergone significant changes over the last few years in an attempt to become more sustainable and aesthetically appealing to visitors and the UBC Community alike. The Public Realm plan delineates these ideas and aims to animate campus through infrastructure and landscape improvements. A primary area of improvement was the SWC, located between the UBC bookstore, the Robert H. Lee Alumni Centre and the Martha Piper Plaza. This space was redeveloped from a parking lot into a public space that recycles stormwater, in an effort to achieve the goals of sustainability and community. The centrality of the SWC means that the space was designed to serve as a gateway to UBC's campus and thus our research sought to understand whether the SWC served this purpose and met the objectives of the Public Realm Plan. This plan was designed from the perspective of UBC's Campus and Community Planning, therefore our research aimed to understand the perspective of the UBC community to discover if there is a disconnect between the aims of the plan and how it is actively utilized.

Alongside our community partner, Social, Ecological and Economic Development Studies (SEEDS) Sustainability Program, we carried out research to examine the value of the SWC to the UBC community. Accordingly, the focus of our study was the SWC and how individuals use and interact with the space. To gather information on the UBC community's perspective on the value of the Cascades, we conducted an online survey, a

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focus group and participant observation. Through the online survey, we were able to understand the opinions of the UBC community in an anonymous manner, as the survey yielded a large number of results. Meanwhile, the focus group allowed us to gather more detailed feedback from specific members of the community, which offered greater insight and understanding of the space and the issues that people had. The participant observation allowed us to understand how individuals used the space on a daily basis, thus attributing value to different components of the space based on how they were used. The three methods of research complemented one another, as the survey provided a large quantity of results, while the details we gathered from the focus group offered greater quality of ideas, with the participant observation reinforcing our results from our other methods.

Throughout the study, we sought to explore the SWC through a social and ecological lens to understand how the space could be improved for the UBC community. Our SEEDS partner was particularly interested to understand how the existence of a monoculture within the space affected how individuals viewed the space. While our research originally sought to understand the economic value of the space, we found it difficult to establish an effective methodology to gather this data, thus the study primarily focused on the social, ecological and aesthetic aspects of the Cascades and whether the SWC were viewed as an effective public space. As such, the primary objective of our research is to address how the SWC are valued by those who interact with it, and how it

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can be changed to become more socially engaging and ecologically sound. Based on our findings, we provide future ideas for development that could improve the aesthetic appeal of the landscape, the community's understanding of the space and the amount that individuals use the space.

Review of the Literature

The SWC are a central and important public space on the UBC Vancouver campus and thus, it is crucial to understand why the provision of public spaces within urban environments is important. Public spaces can establish a sense of belonging and identity if organized effectively and for Haas and Olsson, they are understood “as spaces that are accessible and open to all” (60). As such, they are an “arena for equity, diversity and justice, where marginalized groups can make themselves heard” (61). This definition of public space is crucial to our research. Since the SWC are labelled a ‘public space’, our research hopes to understand whether the space provides these amenities and generate a sense of place for those that utilize the space. Cameron Duff articulates how a sense of belonging to a place is formed through individual ties and emotional resonance, capturing the necessity to develop space in accordance with societal desires and actions. Thus, establishing a sense of place is a process. The more we get to know an undifferentiated space, the more we endow it with value, thus allowing us to identify with the space and form a sense of place (Tuan 6).

The SWC must be of economic and social value to remain viable. Julia Bennett highlights the importance of ‘symbolic capital’, which recognizes the economic and social value of land (659). Reputation of place creates economic success, while attracting users helps establish social capital, thus allowing for the formation of ‘symbolic capital’. Our research attempts to disseminate whether the SWC hold a reputation and are able to

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attract the public, thus creating 'symbolic capital'. Lindholst et al. consider how making green spaces 'valuable' is increasingly complex, given the vast array of opinions that emerge from politicians, professionals and the public alike (168). By collecting data from the UBC community, such as students and staff, our research originally aimed to understand whether there is tension between the community's valuation of the space from a social perspective and UBC's administration's valuation of the space, primarily from an economic perspective. Yet, due to time commitments, we only managed to gather the perspective of the community, which denotes a potential area for further research. Moreover, the different opinions of value can also be articulated by considering the role that the Musqueam pole plays within the space, and how well the space reflects the values of the post. Although this is beyond the scope of our research, the varied opinions of the space could be explored from the perspective of those that carved the pole and built the feature, and thus whether this improves how they identify with and use the space. This concept of valuation could be an important and worthwhile area of future study for UBC.

Pugalis notes how the "everyday user values are not necessarily congruent with those held by professional-bureaucrats", thus it is important to gather the knowledge, wisdom, expertise and creativeness of the everyday user to establish a vibrant and economically active public space (228). We engaged with the 'everyday users' of the space, through the online survey in an attempt to understand what they value about the

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space and whether there are aspects that could be improved. Moreover, a key purpose of the SWC is to provide a welcoming entrance into the University, which reflects and corresponds with the morals of the university. Through the focus group, we sought to understand if the UBC community agreed with the ideals that Campus and Community Planning created. Without these attributes, the SWC serve more as a space, rather than a place that individuals identify with, want to use and wish to maintain.

Actions, such as walking, play “a role in the ongoing re(production) of space”, as they help to create sentiments of familiarity and identity (Duff 883). While Duff utilizes the example of walking to accentuate the importance of individuals interacting with space, it is important to recognize that space can provide many opportunities for activity. Often, routine performances are symbolic of “idiosyncratic experiences of place”, emphasizing the need for the space to be accessible for daily use to establish a sense of identity (883). Additionally, William Whyte observed the movement of individuals around his area of study to better understand what users desired from the environment. He comments on the effective capacity of urban spaces and how to measure the overall attractiveness of the public areas (68). As such, we propose to follow Whyte’s data collection by observing the movement of individuals around the SWC, while our survey aimed to understand how individuals tended to use the space. Understanding the relationship between individuals and space is decidedly complex. On the one hand, individuals produce meaning towards a space, by experiencing, contributing and

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attributing value towards a space (Cresswell 7). On the other hand, Archer notes how the built environment influences human interest by dictating how individuals think and act within the space (432). Therefore, public space is more than points on a map, rather it acts in relation to the individuals that use it, highlighting how self and place are inextricably intertwined.

According to the Public Realm Plan, the SWC were designed to serve as a social space on campus and our research aims to understand whether they have successfully fulfilled this goal. Lefebvre argues that a successful public space is 'spontaneous theatre' that facilitates interactions and movements of everyday life (18). Thus, public spaces are "the most identifiable aspect of economic health, cultural vibrancy and public life of an area", meaning that human interactions should be encouraged to promote prosperity (Pugalis 215). Pugalis notes that people activities are some of the most important qualities of public spaces and suggests through his research that public space can be improved by holding more frequent events (222-223). Given that a successful public space requires the active presence of individuals, our research seeks to identify whether the SWC engage with public to facilitate interactions and questions whether the space needs to encourage more events to improve the vibrancy of the space.

Whyte provides a theoretical approach to analyze how public spaces attract users and the different ways that spaces can be improved. The idea of constructed nature is often used in many high density urban areas to juxtapose the element of the natural and

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built environment. Whyte highlights the importance of the use of nature as a key planning mechanism to sustain public satisfaction. This is particularly relevant in the space surrounding the SWC as the natural elements, namely water and plants, are not consistent throughout the year. In order to remain valuable, the natural elements must be satisfactory for the public and our research attempts to understand whether the existing natural landscape is enjoyed by the UBC community.

The ecological value of space is derived when there is a level of benefit between humans and their surroundings. For Irvine and Fuller, it is crucial to understand how biodiversity affects individual actions and perspectives when analyzing the ecological value of a space (215). Moreover, public space must be viewed for its natural significance, as well as its aesthetic and structural value, underlining the importance of ecology within public space (Cascante and Turney 5). Yet, Hosey reflects on the reputation that has formed around green spaces, with society tending to see green spaces as “all substance and no style” (3). Hosey contends green design often requires a compromise or trade-off with looking good, given that the ‘best’ pieces of recent landscape architecture were the least sustainable (5). Thus, the relationship between sustainability, design and public perception is decidedly complex. Therefore, part of our research seeks to determine whether the green space included in the SWC affects how the public values the space. The ecological aspect of the SWC are inextricably intertwined with the social and economic

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value of the space, highlighting the importance of our research, and the need to effectively include all three aspects into the space.

When examining the SWC as a public space, it is crucial to understand their environmental purpose. The idea of a constructed wetland has become more popular in recent years. A natural wetland provides a filter for nutrients (and potentially pathogens) in non-potable water while also supporting high levels of biodiversity. Kivaisi defines a constructed wetland as a wastewater treatment system that uses engineered systems that are designed to replicate natural processes (550). Fully mechanized water treatment systems can be prohibitively expensive, and a constructed wetland offers an efficient yet inexpensive alternative system (547). The Cascades have an environmental function, whereby they help to reduce stormwater flows by detention and retention. As such, the feature coincides with UBC's system that treats stormwater to improve water quality and demonstrates a unique capture and treatment process (Public Realm Plan 5). However, the reed-based ecosystem is expensive to maintain, calling into question the cost and economic value of the space.

The UBC Public Realm Plan implemented from 2014 onwards was designed to animate and bring life to campus, enhancing the educational experience and instilling a strong sense of place (4). The SWC were a key aspect of this plan and replaced the parking lot that previously occupied the space. More than a visible expression of the University's commitment to sustainable best practices, the stormwater terraces have

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become a multifunctional gathering place and hub of activity between busy pedestrian routes, incorporating public art and dramatic night lighting (PFS Studio 2016). The sides of the cascades feature prominent concrete seating areas for students and staff as well as a main wooden floating deck featured at the bottom of the cascades. The magnificent Musqueam post, found on the bottom terrace of the cascades was raised and dedicated at UBC by artist Brent Sparrow Jr. It welcomes visitors to the University campus on the traditional, ancestral, and unceded Musqueam land and speaks to the special relationship between UBC and the Musqueam people. The main deck is used by UBC's numerous clubs as well as other social activities on campus. The plan implements a clear pedestrian zone, which concentrates student traffic and serves as a gateway to the UBC campus (Public Realm 9). It also completes the Achievement Square, which features the brand new UBC bookstore and Robert H. Lee Alumni Centre. For the Public Realm Plan, the completion of the SWC has allowed UBC to create a more memorable campus with a strong identity.

The literature review provides a more detailed understanding of the role that public space plays in developing community and a sense of belonging and how green space can improve individual sentiments towards the space. Therefore, our aim is to disseminate how the current space is valued by the public and to understand how the space can be improved to ensure continued identification for generations of UBC students, staff, faculty and visitors. Given the focus UBC gave to the redevelopment of the

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space, it is important to understand the economic, social and ecological value from the perspective of daily users.

Methodology and Study Design

Our methodology consists of three distinct elements executed in conjunction with one another. Our broadest method was our participant based observation, which looked at the students and passersby most immediate and literal interaction with the SWC.

Secondarily, we looked at our personal networks understanding of the space via an online survey. Lastly, we conducted an intensive focus group to discuss in depth various community members' personal accounts of the SWC. We chose to focus on the SWC through progressively narrower lenses to ensure that we were able to gather input from all relevant parties. We hoped to account for all parties despite them not necessarily directly interacting with the space during the limited time lapsed during our study.

The online survey was used to gather responses from the UBC community regarding their opinions on the SWC and how they believe that it could be improved. We designed our survey using fluid survey and the process took several drafts to complete, as we received feedback from our professors and stakeholders to ensure that the questions were as succinct, relevant and clear as possible. Our survey was designed to be short and easily accessible, as the questions mirrored the focus group questions, which would provide more detailed responses. As such, we used a mixture of open and closed questions, with the open questions being optional rather than mandatory. The questions focused on how the UBC community used the space and which existing attributes they

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liked and disliked, as well as any additional improvements. Moreover, we surveyed whether the seasons or weather patterns altered individual's use of the space and finished with a question surrounding the sustainability of the space. We administered our survey through our own social networks using social media, primarily Facebook and garnered 98 completed responses.

The volume of the responses provided us with clear quantitative data, which was a core strength of this data collection method. As such, we were able to understand the general views surrounding the space from the UBC community, which complimented our focus group responses. By providing open questions, we were able to gather valuable, in-depth responses and opinions on the space, which we discuss in greater depth during our analysis. However, these open-ended questions were not completed by all participants, which limited the amount of detailed responses that we received. Additionally, we originally wanted a question on the Musqueam post and how its presence contributed towards how individuals valued the space. However, we found that it was extremely difficult as the question tended to over-simplify such an emotionally complex issue, and thus we decided to remove the question. However, this meant that our survey did not consider all the valuable aspects of the space. The wording of the questions also caused several problems. Notably, we found it difficult to define specific geographic terms, such as "spatial" and "actively engaging", in a more accessible manner. A final issue that we encountered was that our respondents were limited to individuals within our own social

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networks. As such, our respondents were primarily undergraduate students. If this project were to continue, we would suggest expanding the scope of respondents by utilizing networks beyond personal social media accounts.

We carried out a focus group to obtain qualitative data for our research project. For the discussion, a group of seven individuals were selectively chosen, whom we believed had different perspectives and varying knowledge bases regarding the SWC. While we tried to recruit individuals from different but relevant fields, and of various ages, education and employment statutes, the timing of our focus group created foreseeable obstacles. The individuals included the AMS Sustainability Coordinator, an undergraduate electrical engineering student, a first-year student living on campus, an undergraduate political science student and various SEEDS staff members. We had aimed to include both a civil engineering student rather than electrical and an environmental design student for wider and slightly more relevant perspectives. We created six broad and open ended questions to facilitate the focus group discussion, with a total set time of 60 mins. In addition, we printed images of the SWC in different seasons, which provided us with conversation prompts.

We designed our discussion in a way that we hoped every individual would feel comfortable enough to express their opinions, whether positive or negative. We remained impartial in our discussion and spoke only to further promote discussion or articulate a question. We started with a conversation discussing the individual's personal

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experiences of the space. Our aim was to start with an open-ended conversation piece so that the individuals may become accustomed to one another. Subsequently, we moved into questions that mirrored those in the online survey and discussed whether the space served as a gateway to campus, the existence of the reeds and what improvements individuals would like to see in the space. In addition, we encouraged individuals to share their own personal stories and memories of the space so that we could understand the personal and emotional value of the SWC for those present at the focus group. The focus group provided us with significant amounts of data, which reflects the key challenges that we faced: keeping the conversation on track and ensuring that we did not focus predominantly on one particular aspect of the space.

Our original method of participant observation was more interactive, as we intended to hold short interviews at the site. However, our decision to not focus on the Musqueam post, alongside our limited time commitment and the poor weather caused us to alter our method. Over the course of a week, we sat and observed how people interacted with the Cascades. As part of our daily routines, we began to observe individuals as we moved along the SWC, denoting the informality of this method. Despite the rainy weather during the week we collected the data, we were able to get one sunny day on which to observe. As there is no single location that provides a good view of the entire Cascade, we chose to focus on the bottom half, particularly the seating along the sides, the main deck covering the filtration equipment, and the open space between the

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SWC and the Robert H. Lee Alumni Centre. This was done in order to see the largest variety of activities. As there is no seating in the upper part of the Cascades, observing there would only allow us to analyze the foot traffic between Main Mall and the bus loop, whereas the bottom includes seating as well as foot traffic. The aim of the participant observation was to understand how individuals unconsciously moved through the space. Whereas the focus group and survey forced individuals to actively think about how they used the space, the participant observation provided us with how individuals naturally use the space. We simply noted down our observations and analyzed them at the end of our week, although in the future we would suggest engaging in a longer period of participant observation to account for seasonal variations.

The three processes that we utilized for our methodology complemented each other, as the survey provided the quantity of data that we needed, while the focus group improved the quality through more detailed responses and the participant observation reinforced the ideas established in the other two data methods. While improvements to our methods could be made, we were able to garner a wide variety of perspectives that yielded interesting results and provided us with a deeper understanding of how the SWC is valued by the UBC community.

Data Analysis

Survey Data

At final count, our survey was completed by 98 individuals with approximately 85% of respondents identifying themselves as UBC students. When asked how people ‘used’ the space (Table 1 below), the top responses demonstrated that the SWC served its social function well, as it is mostly used as a pathway to classes, a place to socialize with friends and family and a place to sit in between classes. This correlates well with the intentions of the UBC Public Realm Plan.

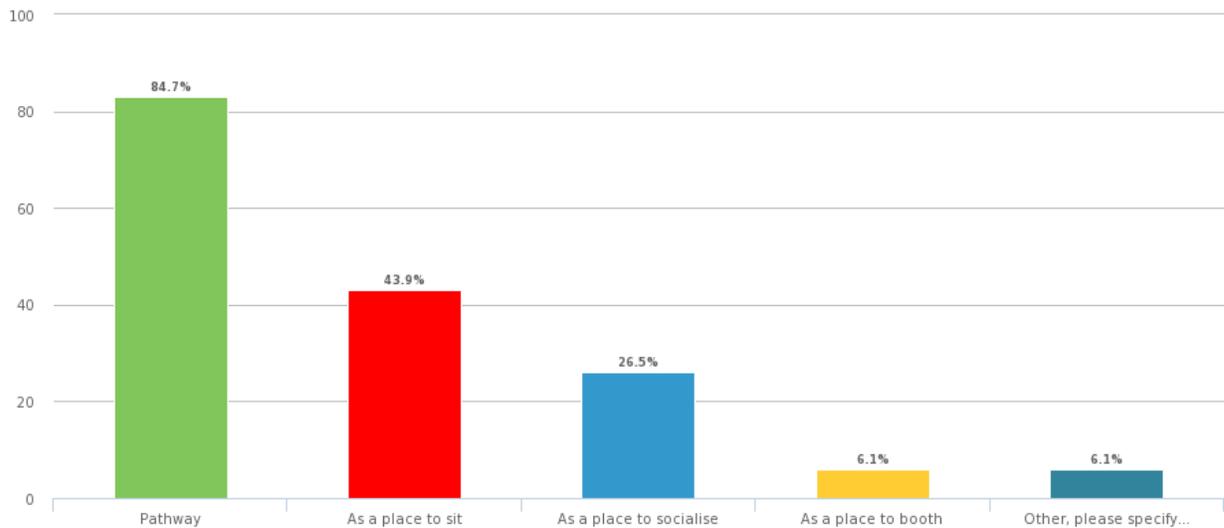


Table 1 - How participants use the space (Survey Data)

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Next, we asked why respondents chose to use the space. Many of the participants cited reasons such as it being the shortest route to their destination to their classes, offices or residential homes on campus. Others cited the scenic views of the heart of campus and the 'live' water feature offered by the space as well as a place to socialize amongst peers. In addition, others pointed to the use of food trucks and stalls hosted by different campus programs and activities such as the AMS. As such, this reveals how the space serves a number of different functions, demonstrating the huge variety of reasons why the UBC community value the space. Table 2 below showcases the data of responses.

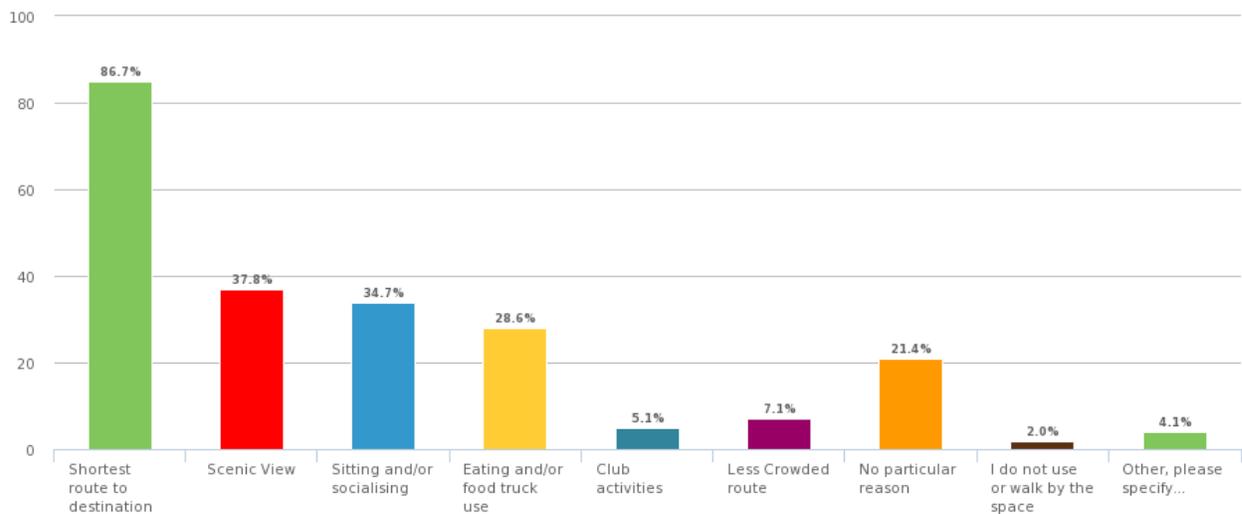


Table 2 - Why participants used the space (Survey data)

In terms of frequency of use, most people used the space 2-3 times a week whether it be to sit or to simply use the space as a passage to their destination. The 2nd highest response being “at least once a day” showcases the huge amount of foot traffic

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that the space experiences during class hours, marking the importance of the space to the UBC community and the role it plays in most respondents day-to-day lives.

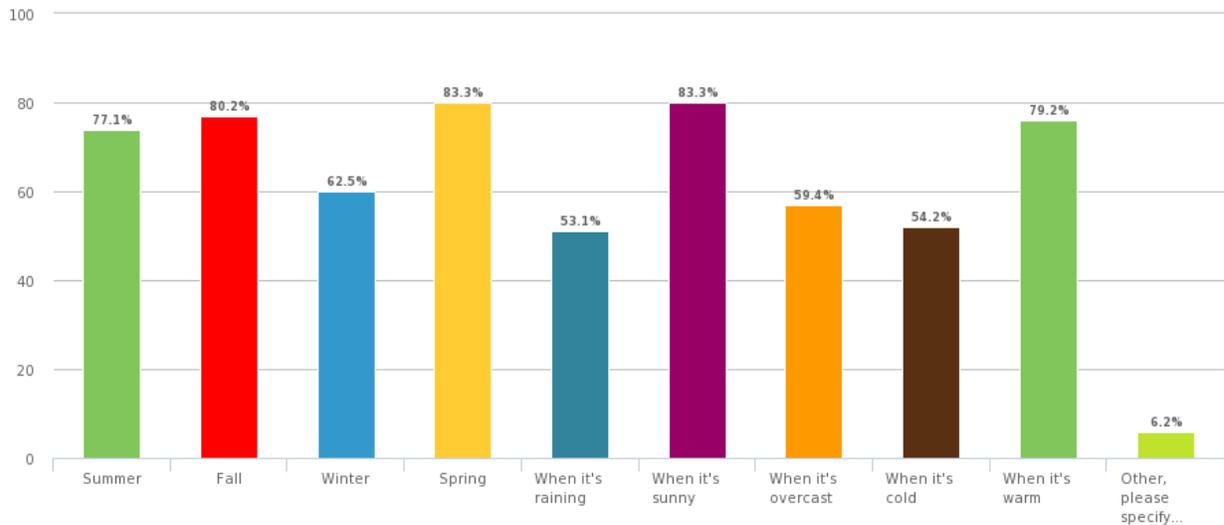


Table 3 - Seasonal effects on the Stormwater Cascades (Survey data)

Through the survey, we tried to enquire to see if the seasons had any effect on the usage of the space (Table 3 above). We were expecting responses to favor the summer and spring months and they did. The data shows a drop, in usage during rainy, or snowy days as there is inadequate cover from the natural elements. Although many people may walk past the space or through it on such days, the weather did not permit active usage of the space. The seasonal variation of use provides a key area where improvements could be made to ensure that the space remains important throughout the year.

Next, we researched what characteristics and features of the space the participants liked or disliked. We found that the most popular features were the deck at the bottom of the cascades that offered a natural place to congregate and actively use the space. Others according to the survey, cited the 'natural' and 'wild' streaming water feature, as well as the seating found on the sides that allowed respondents to enjoy the space. The most controversial feature were the reeds with several participants citing their negative aesthetic impact on the space. Many complained that the reeds looked messy for most of the year and were not sustainable for more than a few months in the summer. Additionally, many respondents complained that UBC and the designers could have used more aesthetically pleasing plants that served the same filtration function. As such, this question demonstrated that the much of the existing feature was enjoyed and utilised by respondents except the reeds, which were the only attributes surveyed that garnered negative responses.

Finally, regarding the use of potable water in the SWC, which was a major contestation point in regards to sustainability, an alarming number – approximately 73% of participants were unaware of this fact and believed that the SWC were much more sustainable. Many of the participants thought this was wasteful on UBC's part and hoped future iterations of the project would be more sustainable. Many also agreed that UBC should have been more transparent about the sustainability of the feature.

Focus Group

From our discussion, there were a few repetitive responses and recurring themes that were recorded for our analysis. The majority of the individuals reflected on the positive significance of the geographical location of the SWC, as the majority of participants believed that the space served as a gateway to the campus, despite the existence of other small features around the campus. The transformation of the space from a parking lot to the SWC was considered a better choice by all our participants, with many respondents stating that the space was a key area that they showed visitors to UBC, demonstrating that the space is increasingly crucial to UBC and thus, individuals identify with the space. The concern for the lack of knowledge about the historic significance and the ecological functionality of this system was brought up several times in the conversation, with the majority stating that they would like to know more about the space and how it functions.

Several individuals were also vocal about their dislike of the reeds and how they reduced the aesthetic appeal of the space, which complemented our results from the online survey. The lack of comfortable seating and finding peace in such a hectic and fast paced location was a worry for the few. In fact, several participants referred to the success of additional seating during the summer months, demonstrating that individuals liked to spend time in the space but there was not enough opportunity to enjoy it. While the reeds were unpopular with the participants, the natural flow of water, widespread

wild reeds and the sound of flowing water was seen as an added overall experience. Notably, one individual shared his memory of a family of racoons in the space, and how that created a sense of community and excitement, while another shared how he used the mushrooms in the water to cook at home. Both these personal anecdotes reveal the added value that the natural environment provides to the UBC community. Moreover, the water was considered to provide a sense of calm and tranquility, which was widely appreciated, demonstrating how the ecological aspect of the space added value to the community.

Participant Observation

The participant observation revealed that the deck at the base seemed underutilized, even on a (relatively) warm and sunny day. It is at the heart of campus, with thousands of people moving by it every day, yet only a handful stopped to eat lunch on it. Even the presence of a food truck directly next to it did not attract people to the space. Interestingly, the deck and the seating along the sides was a popular place to sit for a couple of minutes. It seemed as if people would sit down and finish typing a text, then continue walking. In addition, most people passing through seemed to take the diagonal path across the Cascade towards the Nest, as that is the most direct route to the main bus loop. The lack of covered space along the Cascade seems to be a major deterrent, essentially turning it into a space that can only be used when the weather is good.

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Through the analysis of the three methods used it is clear that the space is popular with the UBC community, yet it is widely underutilised, as the social spaces are relatively uncomfortable. While the reeds were a common aspect that individuals disliked, the use of water and natural space was popular and created a unique, central public space on UBC's campus.

Significance of Proposed Research

Our study is the first public evaluation of the SWC and provides a foundation for future research surrounding the space or similar projects. It serves as a small scale public consultation analyzing the SWC and creates a better understanding of the needs and concerns of the UBC community in regards to public spaces on campus. It highlights popular ideas valued by the community, such as sustainability, green space, and social engagement. Our research draws on various public space academic literature which was used to frame our research question and methodology. As such, aspects such as vibrancy, active engagement and the idea of space and place are key to our study. The SWC are currently in a transition period whereby public consultation can provide valuable information to designers to help combat initial design flaws, of which the utilisation of reeds in the water, and the seating design, are two popular areas of contention.

Given its spatial location between the heart of campus and the bus loop it serves by default as a gateway to campus and distinguished landmark. The two pathways which run along either side of the cascades receive large amounts of pedestrian traffic daily from members of the community as well as visitors. Its proximity to popular buildings such as the Bookstore and the Nest also make it a space which is often passed through many times in the day, not only as individuals leave or enter the university. As such, studying the space's pros, cons, and feedback provides valuable information to UBC's

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planning department; Campus and community planning. The results of our study conclude that the SWC could be valued more by the UBC community with some minor improvements to the space. Given the large volume of people that pass through the space every day, it is in the University's best interest to consult studies such as this in order to understand the needs and concerns of individuals so as to effectively act in a manner that follows Campus and Community Planning's 10 engagement principles.

Given the history of the land UBC Vancouver is located on, it is vital to ensure the area surrounding the Musqueam post; the SWC, reflects and respects the cultural sensitivity associated with indigenous art and in a broader sense the University's ongoing efforts of truth and reconciliation. The results from our study show that many feel the space could be improved aesthetically and so this study serves as an effective reference to advocate the need for improvements, particularly regarding the availability of opportunities for socialisation, as well as the aforementioned replacement of the reeds. This study is also beneficial in evaluating to what degree the SWC meets the university's public realm plan goals and provides recommendations on how to further meet some of these goals. Although this study focuses on the SWC as a public space as part of the UBC campus, it also contains research which can be valuable to designers of other public spaces, especially other university campuses.

Future Research Directions

Our research identified several improvements that could be made to the Cascades in the future. First, the focus group and participant observation indicated that the main deck at the bottom of the SWC would benefit from investment in order to make it a more interactive space that would encourage individuals to spend more time around the Cascades. Given the centrality of the space, it is currently widely underutilized and through our conversations and observations this is in large part to the lack of comfortable seating around the SWC. We suggest that the center of the deck could have benches added, while additional seasonal seating could be provided in order to reflect the added value of the SWC during the warm, summer months. Alongside this, all three of our data methods revealed that the space was widely underutilized during poor weather, thus we suggest that coverage be added to parts of the seating and/or the main deck to improve the amount that the SWC is used. In doing so, this would improve the vitality of the space, as the community would be encouraged to spend more time in the space outside of the summer months.

Secondly, both the focus group and the online survey revealed that the community would like to learn more about the space and many respondents felt that not enough information was provided around the space. In particular, we suggest that specific information be provided on the plants used within the SWC, the aspect of stormwater

FUTURE RESEARCH DIRECTIONS

retention and how sustainable it is and further information about the Musqueam post. As such, we suggest moving the information on the post into a more prominent position, as our research shows that this would add cultural value and thus improve the community's sense of belonging to the space.

Early on in the project we made the decision to not put too much of our focus on the Musqueam pole. We felt that we could not devote the necessary attention to such a sensitive topic. However, the pole came up frequently in both the survey and the focus group. Thus, we recommend that a separate study focusing just on the Musqueam pole would be beneficial in assessing the social and cultural value of the post, particularly as UBC continues to engage further with the Musqueam community.

Lastly, it became clear that the reeds are not a popular feature. Their poor aesthetics in the wintertime came up in both in the focus group and the survey. However, participants also discussed the lack of information about them (similar to the lack of info about the sustainability of the feature). Removing the reeds would solve the aesthetic problems, but would require their replacement with a plant that could perform the same filtration function, such as trees. If they are not replaced, a display detailing their purpose and importance will be necessary.

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Appendices

Appendix 1

Survey Questions

1. What best describes you?
 - A. Undergraduate student
 - B. Graduate student
 - C. Staff
 - D. Faculty member
 - E. Community Member
2. What best describes how you use the space? Check all that apply.
 - A. Pathway
 - B. As a place to sit
 - C. As a place to socialise
 - D. As a place to booth
 - E. Other, please specify
3. What best describes why you use the space? Check all that apply.
 - A. Shortest route to destination
 - B. Scenic view
 - C. Sitting and/or socialising
 - D. Eating and/or food truck use
 - E. Club activities
 - F. Less crowded route
 - G. No particular reason
 - H. I do not use or walk past the space
 - I. Other, please specify
4. How often do you interact with the space for any of the reasons mentioned above?
 - A. At least once a day
 - B. 2-3 times a week
 - C. Once a week
 - D. Less than once week
 - E. Never
5. Does the season affect how you use the space?
 - A. Yes
 - B. No
6. Check all that apply. I use the space in the:
 - A. Summer
 - B. Spring

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- C. Winter
 - D. Fall
 - E. When it's raining
 - F. When it's sunny
 - G. When it's overcast
 - H. When it's warm
 - I. When it's cold
 - J. Other, please specify
7. Select which aspects of the space that you like or dislike, or are neutral to
- A. The deck
 - B. The water
 - C. The access to the food trucks
 - D. Central location
 - E. The musqueam post
 - F. The reeds
 - G. The booths and club activities
 - H. The seating along the water
8. Is there anything else you like about the space?
9. Is there anything else you dislike about the space?
10. Is there anything that could be improved or added to the space?
11. If we were to say that the Stepped Water Feature runs on potable water instead of filtered Stormwater, would this change your perception of the space? Why?

Appendix 2

Focus Group Questions

1. What is your current perception of the Stormwater Cascade?
2. How do you value the transformation from a parking lot to Stormwater cascade feature?
3. How do you engage with the space?
4. Filtration purposes aside, do you think the plants are important to the space?
5. Does the Stormwater cascade satisfy the requirements set out by the UBC Public Realm Plan?
6. Several years ago, large white beanbags were placed in front of Koerner library. If a similar interactive feature such as hammocks was added to the area at the lower end of the cascade, how do you think this would improve the space?
7. Do you think the Stormwater Cascade serves as an entrance to the UBC campus? How so?

APPENDICES

Appendix 3

Focus Group Notes

15th March 2017 - 10am to 11am - Room: CIRS 2336

Simple Introduction of group members and an introduction to SEEDs and their projects

Current Perceptions of the space

Comparison to McGill University Campus visually

Coming off the initial UBC bus loop – the entrance wasn't great

Walking past the water feature was the first time the entrance was welcoming and looked nice

Gave it a nice identity

Beats the parking lot, much better space now (more aesthetically pleasing)

Much nicer space to have closer to campus – citing the gateway role

More aesthetically pleasing space

Value of the sound of the water is great

Any awareness of the water features and uses?

Some people had a notion although most people were confused about its exact ecological/environmental function

Many were unclear about the filtration system which Dean explains does not use enough stormwater and must use potable water to run during drought months

Does not store water in the Winter months

Turned out to be more than just a water feature for most of the members

Dean – Over Reliance on potable water (major flaw)

Not well publicised to UBC community as many members of the group were unaware

Many enquired over the price/cost of the project itself (Dean: a couple million, whole space)

Good portion of main mall is directed into swale running both sides of the mall

People are interested about the functionality of the space and where the water is going after they found out about the lack of storm water and use of potable water

Given how grey Vancouver happens to be there *is* good in having something nice to look at for human and student health

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Racoon story – space for entertainment, wildlife, traffic stopping power

Natural habitat not so much but its value of wildlife possibilities

Musqueam Post is a good feature and some people DO take note and reflect over the post

Landscape supports the story of the post

Not that many spaces on campus that give you a reason to stop and reflect and so the Stormwater feature is unique in that

Dean – monoculture of Reeds

Importance of maintaining its economic integrity in the sense that it is a space/item that transforms over different periods of time (summer, spring, winter)

Degradation of appearance

Reeds were really tall in the summer, didn't know what feature was all about, "didn't care about it. There needs to be a better story to be told by the university to bring awareness to what it is" (referring to the post and the water feature)

"As someone who didn't know much about the Reeds perhaps there needs to be better work from the University to bring more attention to its functions"

Story of *Bouncy Bushes* – bushes on the former parking lot that students would playfully push each other onto. This same tradition cannot be passed onto the Reeds as they are far more delicate and would be ruined (flat, diminished, dying)

Wetlands not well conserved

Height of reeds is an issue – too tall in the summer

As someone who doesn't know much it's difficult to care

To what degree should this space should reflect the value of UBC

The aesthetics are highly valued

What's the trade off in terms of aesthetics and function?

Gateway Role at UBC

When entering from the City it felt like the Gateway

1st year: "Even though I live far away from it in Vanier, I still consider that to be the heart/gateway to UBC"

It's always present. Point of having to pass through it to enter the city – to get to the buses etc. that take you to other parts of town

APPENDICES

Some consider it the heart of campus rather than the gateway due to the SUB, the bookstore, and other activities around the campus (concentration of facilities and activities)

Still others didn't consider it the gateway (Mustafa). New bus loop possibly more central to campus and another gateway to campus

Shout out to the UBC sign which forms a huge part of the entrance (bold, attractive)

Progression of walking up a hill (University Blvd.) that makes you feel like you're walking up to something (sense of progression/achievement)

"It might not be THE gateway but is the heart of campus"

The Musqueam pole adds more significance to the occasion

Reminder that we are on Musqueam land – rightful acknowledgement

Storytelling done when the poll was first revealed

People are naturally in a rush in that location

Most agree it's a place to pass by, do some reading or wait something out

Only a few would choose to sit there

Concrete can be uncomfortable

People would be more inclined to sit on the concrete 'BIG STEPS' if the seating was more accommodating and comfortable

Idea of bean bags/hammocks – It could be viable. Bean bags were successfully used on Robson St. as well as in front of Koerner library. They were taken away after eventual wear and tear.

Making a conscious decision to choose that path

"Great for people watching!"

Natural concentration at the bottom of the steps

Great for campus tours – Japanese students

Not a place to ignore when showing someone the campus

Former bus loop wasn't a pretty site and largely forgettable along with the parking lot

Now it's become a site to see. A space everyone wants to visit

Redeeming from all the construction – former bus loop was never a great gateway to campus, too grey, too boring

APPENDICES

Tons of people make it hard to stay in the space

More of a social space anyways

One guy takes mushrooms from the space ~

The story may need to be more publicised or more readily available

Event space use (AMS, Thunderbird BS, Elections, Storm The Wall, Block Party)

Biking lanes bringing an influx of people

UBC farm pocket market (quite popular among students and staff)

Summer Days – Ice cream and stuff

“I would spend more time in making the seating more comfortable”

“Summer on the Mall” – event

Hesitation to spend prolonged periods of time at the space

Slopes are more difficult spaces to build seating around – Dean makes a fair point

Some form of seating would encourage more people to use the space

Not enough sunny days to justify spending time replacing the REEDs

Maybe the aesthetic value of the Reeds may be there

Just a beautiful space to walk

It's a contrast to other “harder” spaces across campus

Would you consider this a soft space because of water, grass, nature?

Perhaps seating at the main Deck or along the sides would encourage more people sitting and spending their time there

Lee Square as an extension of the space

One focus group participant uses it as “Big steps”

High traffic space discourages hanging there for too long

Lee Plaza itself is too hectic to be relaxing

High foot traffic takes away the relaxation from campus

No quiet zone

Hard to see beyond its aesthetic value

APPENDICES

Public Realm Plan – 6 objectives

First few objectives are true but it strays further and further away the more you go down

Some would say it is aesthetically and economically valuable

“This is where my tuition goes?”

How do you put value on an experience?

Helps student mental health

Aesthetically and calming experience walking through due to the flow of water and greenery

The Totem perhaps dominates the space – some might say the cascades are merely the base of the totem pole

Frozen pond inspires little hockey games

Creating memorable experiences – One participant had that racoon story

It was an experience

Perhaps the space could attract more wildlife – owls, humming birds, coyotes?

Issue of potable water

Focus group was neutral towards it (perhaps not being very ecological or sustainable themselves)

But how does the use of potable water make it not sustainable?

Economics of ecologically sourced water didn't make sense because water is so cheap in Vancouver

Would it be okay if it were Dry in the summer? Not well received

Its functionality in the summer months is important (aesthetics, tourism, tours, more people coming to campus)

The drought was an issue