

UBC Social Ecological Economic Development Studies (SEEDS) Sustainability Program

Student Research Report

**Placemaking for a Cause: Exploring Student Interests in a UBC Interactive Sustainability Centre**

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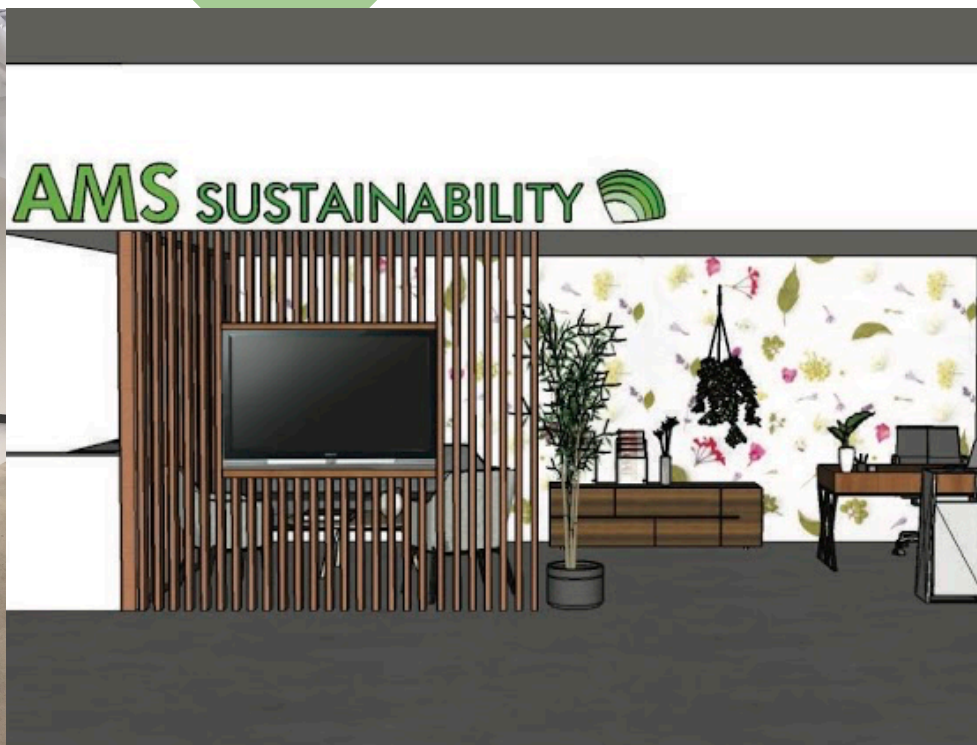
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**Date: March 18, 2020**

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# Placemaking for a Cause: Exploring Student Interests in a UBC Interactive Sustainability Centre



## Executive Summary

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### INTRODUCTION

The Alma Mater Society (AMS) at the University of British Columbia (UBC) is looking to create an **Interactive Sustainability Centre (ISC)** with the intent of encouraging community cohesion around sustainability issues. This research project, conducted by five School of Community and Regional Planning graduate students, aimed to understand student interests for the ISC space. The project's key research question was:

*How can an interactive space in a student centre facilitate the sharing and uptake of innovative ideas in sustainability on campus?*

### REVIEW OF RELEVANT LITERATURE

Literature on interactive and sustainable infrastructure and design, as well as case studies of interactive spaces at UBC and elsewhere, provided useful framing for the research design.

### METHODOLOGY

Employing an **iterative qualitative research approach** to collect both verbal-textual and visual-spatial data, the research team ran two (2) focus groups with a total of ten (10) participants to hear from the UBC Vancouver campus student population about their interests in the ISC physical design and programming, as well as outcomes of the space.

### KEY FINDINGS

Focus group participants were keen to share their perspectives for the ISC. The verbal-textual data from discussions on sustainability and interactive spaces and the visual-spatial data from the participatory drawing exercise, where participants could creatively express their ideas for the space, yielded **findings that were interrelated and connected across the focus groups**.

### ANALYSIS & RESULTS

Some of the key themes from the focus group discussion and participatory exercise include: **Idea-generation, Student-driven, Transparency, Inclusivity, Collaboration, Functionality, and Flexibility**. Recommendations for AMS on ISC implementation include short (physical design - open and flexible space), medium (programming - creating a “ladder of engagement”) and long-term (continued student involvement in ISC operations) actions.

### CONCLUSION

The research team reflected on the nature of the project, including limitations and strengths. The research team also concluded that in order to make the implementation of the ISC a success, AMS should prioritize additional **engagement with students and sustainability groups**.

## Acknowledgements

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The research team acknowledges that the work of this project was undertaken at the Vancouver campus of the University of British Columbia, which is built on the ancestral and unceded territory of the hən̓d̓əm̓iṇ̓əm̓ speaking xʷmə θ kʷəy̓əm people. As planning students, we acknowledge that to bring about decolonial futures we should strive to develop meaningful and committed relationships with Indigenous peoples in any future work that we do.

The research team would like to thank:

- The focus group participants, for sharing their open and genuine perspectives with us;
- The AMS project team - Ian Lin (Sustainability Project Coordinator), Dani Stancer (Associate VP Sustainability), and Michael Kingsmill (AMS Designer) - for providing guidance on their vision for the project;
- Jonathan Kew, SEEDS project coordinator, for providing valuable advice and support during the project; and
- The rest of our PLAN 522 cohort, for sharing the challenges and successes of the experience of this research process together.

## Other Notes

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This research project was undertaken to fulfill the requirements of PLAN 522 - Qualitative Data Collection and Analysis (from January to March 2020), taught by Dr. Leonora C. Angeles at the School of Community and Regional Planning, in the UBC Faculty of Applied Sciences.

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The Behavioral Research Ethics Board at UBC assigned the Research Ethics Certificate H13-02781 for this project.



## List of Acronyms, Tables, and Figures

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Acronym	Description
UBC	University of British Columbia
AMS	Alma Mater Society
SEEDS	Social Ecological Economic Development Studies
ISC	Interactive Sustainability Centre
GECA	Good Environmental Choice Australia

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# 1.0 INTRODUCTION

The Alma Mater Society (AMS) at the University of British Columbia (UBC) is looking to create an Interactive Sustainability Centre (ISC) with the intent of encouraging community cohesion around sustainability issues. This research project, conducted by five School of Community and Regional Planning graduate students, aimed to understand student interests for the ISC space. The following Section outlines context and central objectives and questions of the research project.

## *1.1 Project Context*

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The revival of the ISC was motivated by current AMS leadership priorities and is in line with the objective outlined in the AMS's Student-Driven Sustainability Strategy, which states the AMS will “work with faculty, UBC Sustainability Office and other groups to develop a more problem-based learning curriculum aimed at reducing our ecological footprint and creating a stronger ecological learning community” (Alma Mater Society, 2018, p. 26). Here “sustainability” refers to the 3-pillar model developed by AMS, which incorporates ecological, economic, and social aspects of sustainability.

## *1.2 Purpose of Client Engagement*

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This research project will focus primarily on creation of the user experience of the ISC space by exploring student interest in social and physical sustainable infrastructure for the space. Other research goals include identifying impacts the Interactive Sustainability Centre would bring to students on and off campus, and identifying user interpretations of “sustainability” with regard to environmental and social considerations. Through our research partnership, the AMS hoped to explore the potential of this space to increase social sustainability by promoting community engagement and building cohesion among sustainability stakeholders.

## *1.3 Research Goals and Objectives*

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When designing this research project (hereafter referred to as the ISC Project), we knew that in order to be both relevant and useful, our research goals and questions had to nest within the broader AMS process for the creation of the ISC (Figure 1).

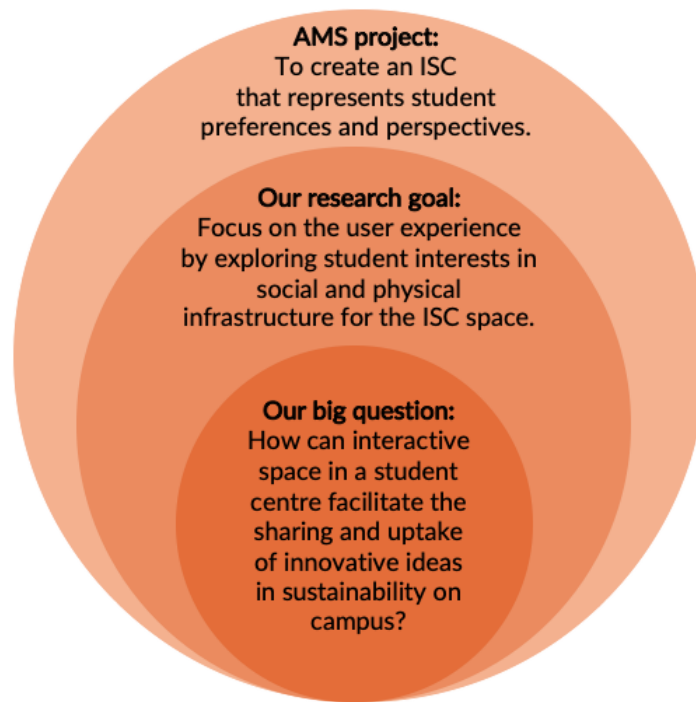


Figure 1. Relationship of the research question to the research goal and the AMS project vision.

As outlined in Section 1.1, the goal of the AMS in creating the new ISC is to represent student preferences and perspectives about sustainability on campus. For the ISC Project, we narrowed this focus to target the user experience of the space, as we knew this project is only one component of the engagement with the student community that AMS will be undertaking.

We specifically wanted to provide student-driven recommendations for the user experience through the design and programming of the ISC - therefore, the primary aim of the ISC Project is to explore student interest in specific physical and social infrastructure choices that contribute to the user experience of the ISC space. Other project goals include identifying impacts the ISC would bring to students on and off campus, and identifying user interpretations of “sustainability” with regard to environmental and social considerations.

## 1.4 Research Questions

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Considering the research goals and objectives outlined in Section 1.3, the specific primary research question that we derived was:

*How can an interactive space in a student centre facilitate the sharing and uptake of innovative ideas in sustainability on campus?*

We believe this question addresses the big picture of what the AMS wants to achieve with the ISC space - specifically, to create an ISC that is active in “promoting community engagement and

providing a space on-campus for building cohesion among sustainability stakeholders.” In order to get at answering this big question, we also derived several secondary questions to guide our research, focusing on the user experience of the ISC space:

- (1) *What factors attract and encourage students to use interactive space on campus?*
- (2) *What forms of social and physical infrastructure are desired or needed by students to facilitate interaction in the ISC?*
- (3) *What outcomes are students looking for from their use and participation in the ISC?*
- (4) *How do students understand the term “sustainability” with regard to environmental and social factors?*
- (5) *What is the existing information landscape on campus surrounding ideas and practice of “sustainability”?*

See Appendix A for the research outline developed at the outset of the ISC Project.

These central objectives and research questions contextualize and clearly define our project. They prepared us to successfully undertake our research design, beginning with the literature review that we delve into in the following section.

## 2.0 REVIEW OF RELEVANT LITERATURE

To dig deeper into the research questions, the project began with a literature review. The following Section details the review of primary sources on the topics of interactive space design and sustainable infrastructure, as well as the case studies of interactive spaces at UBC and other institutions that were used to contextualize the literature.

### *2.1 Literature and Information Context*

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Using the conceptual framework of cities as social-ecological systems, Astbury (2013) makes the argument that urban landscapes have the potential to provide connection with nature and encourage ecosystem stewardship. Astbury (2013) furthers this position by linking the connection to nature and stewardship in urban environments to improve ecosystem and human health outcomes, including resiliency and individual and community well-being.

“Greening infrastructure” – meaning the design and implementation of urban infrastructure using an ecological system lens – is the point of intervention where resiliency and well-being outcomes can be improved (Astbury 2013). Astbury (2013) suggests specifically focusing on creating inviting, interactive spaces where people can actively undertake stewardship activities – such as planting, restoration, active transportation, etc. – driven by their individual and community skills and values. Guidelines for the creation of “inviting landscapes” to facilitate learning, deep engagement, and social and ecological health improvements are provided. Reconnecting cities to people and nature can be best facilitated by creating inviting landscapes that “provide opportunities for citizens to get involved in designing and physically making places in ways that allow for creative input, community building and education, thus enhancing both natural and social capital” (Astbury, 2013, p. 78).

The primary interest of the AMS is ensuring the ISC is reflective of the desires and interests of the whole student body. With this in mind, it is useful to frame the project using Astbury’s conception of the term “inviting,” to create a sense of belonging and create opportunities for people to do things they want to do, as opposed to pushing or motivating people to undertake pre-determined actions. The ISC has the potential to provide space for students to undertake their own actions to promote and engage in sustainability practices on campus, contributing to a sense of place, responsibility, and investment in the ISC. This potential is predicated on a participatory process among key stakeholders to identify existing gaps in sustainability-related programming on campus.

Robinson et al. (2006) describes the participatory approach used in the Georgia Basin Futures Project, which aimed to engage the public in exploring creative solutions for sustainability issues in the Georgia Basin. The researchers simulated potential futures, asking interested users to identify events or concrete policies that would lead to the proposed future. The complexity of the content was best communicated during longer, half-day workshops that gave the participants time to learn, play with, and understand the tools. It was also found that engaging with lay-people in the

absence of “experts” was more conducive for non-normative discussion, user buy-in, a higher degree of learning, and a greater sense of responsibility for outcomes. The Georgia Basin project also discovered the salience of proximity regarding temporal and spatial scale. Users were more invested in actions that they could commit to personally and that would benefit them locally and within the next 40 years. Information and projects regarding global action for long-term change could be lost on the lay- person who might be discouraged by the scale.

Physical infrastructure also plays a critical role in fostering environmental attitudes for urban livability. In their post occupancy study, Heerwagen and Zargreus (2005) explored how the design of the Philip Merrill Environmental Center in Annapolis, Maryland encouraged environmental stewardship among occupants. The views from the building made it easier for workers employed in the environment-sector to situate their work within the surrounding ecosystem. Open design, where UBC students both inside and outside of the center could be visually connected, could similarly promote a sense of community and connection within the ISC. Placemaking can encourage behavioral change, help students feel more connected with Sustainability at UBC and raise sustainability awareness on campus – through initiatives, on-going projects, and volunteer opportunities.

In light of the contribution of the information technology (IT) industry to environmental degradation, Murugesan (2008) frames the greening of IT infrastructure as a moral imperative. A holistic approach to green IT incorporates aspects of use, disposal, design, manufacturing, and acquisition. Environmentally sound practices of IT use include: enabling power management features, designing spaces to minimize the need for cooling, and virtualization to consolidate physical IT infrastructure. Murugesan (2008) characterizes the adoption of green IT strategies based on a continuum of implementation: A tactical incremental approach preserves existing IT infrastructure and opts for low-hanging fruit to reduce energy consumption, while a deep green approach involves a comprehensive and innovative plan to address broader sustainability goals.

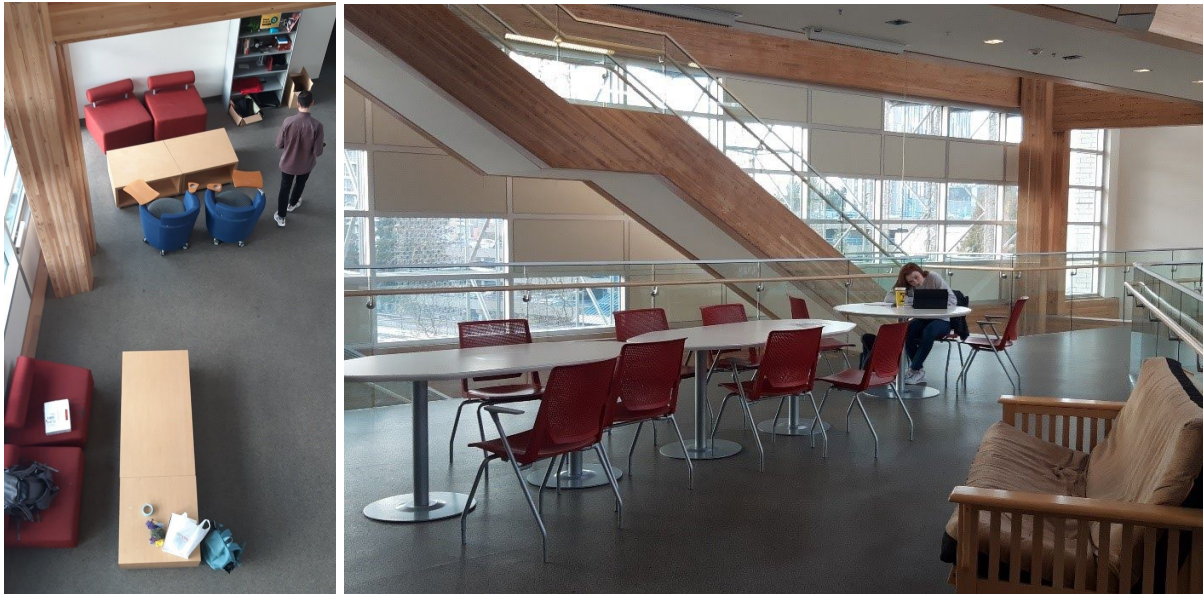
In repurposing an existing space for their ISC, the AMS has the opportunity to apply a variety of green IT strategies along the implementation continuum described by Murugesan (2008). Energy consumption can be reduced through low-cost power management practices such as energy-efficient lightbulbs, maintaining optimal room temperatures, and investing in energy management software for IT. Energy and resource consumption are also embedded in the manufacturing and disposal processes of IT and other physical elements of the space (Murugesan, 2008). When defining the requirements for IT within the ISC, the AMS should first consider whether older equipment can be reused or refurbished to meet their needs. If existing IT equipment in their possession is outdated, the AMS should consider whether it can be repurposed before recycling through the appropriate channels.



## 2.2 Case Studies of Interactive Spaces

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### Centre for Interactive Research on Sustainability, UBC



*Figure 2. Centre for Interactive Research on Sustainability at the University of British Columbia.*

Figure 2 depicts a long, narrow space located within the Centre for Interactive Research on Sustainability (CIRS). Its dimensions are similar to those of the proposed ISC in the basement of the Life building, although this area is part of a larger space on the second floor of the central atrium where people can travel between offices (known as the second-floor bridge). This portion of the building is populated with seating and opportunities for collaborative work. Similar to the proposed ISC, the second-floor bridge attracts a high amount of through-traffic. The high ceilings, windows, and a variety of moveable furniture contributes to the success of the space. Moveable furniture, the variety of seating arrangements, and potential study configurations are important for student spaces on campus. The importance of open, welcoming, space to invite students into a new and unfamiliar space will also support the AMS' objectives for the ISC.

## Materials in Mind Pod, Good Environmental Choice Australia



Figure 3. The interactive Materials in Mind Pod (GECA, 2017).

In 2017, Good Environmental Choice Australia (GECA) acquired a shipping container and developed it into an interactive space intended to educate users on “what makes a sustainable product or material” (Figure 3). The interior of the shipping container was built out using GECA certified materials, and displayed information graphics about environmental, health, and social issues associated with various building materials. The focus of the project was toward the interior design industry, to promote the utilization of sustainable building materials for standard projects. The content of the information provided is similar to that of the ISC, not only for its environmental scope, but also its call for action. In the ‘Materials in Mind’ pod, the call to action is for architects and designers, who are already actively practicing in the field, whereas the ISC is geared toward students with varying levels of involvement in environmental issues.

## Green Kiosk, Princeton University



Figure 4. The GreenSpace Kiosk at Princeton University (Princeton University, n.d.).

Finally, the Greenspace Kiosk is an interactive exhibit informing students at Princeton University of sustainability research and initiatives on campus (Figure 4). The kiosk was installed in 2012 and built out of reclaimed wood from a fallen oak tree on the Princeton campus. The examples of sustainability through materials in built form as well as the information provided are very much in-line with what the ISC claims to be attempting to accomplish. The DNA of this exhibit imbues environmental awareness and responsibility, providing a useful framework for consideration of the ISC.

These highlighted examples have drawn on both the literature and physical spaces of interactive space design and sustainable infrastructure to present the diversity of ways interactive space can be designed. This influenced the breakdown of our methodology, and the questions we eventually asked our focus group participants.

## 3.0 METHODOLOGY

The following Section outlines the research project methodology for data collection and analysis. Employing an iterative qualitative research approach to collect both verbal-textual and visual-spatial data, the research team designed focus groups to hear from the UBC Vancouver campus student population about their interests in the ISC physical design and programming, as well as outcomes of the space.

### 3.1 Research Methodology

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Building on the research goals and the findings of the literature and information review, we decided that a series of focus groups would be the primary mode of qualitative data collection to address the proposed research questions.

#### *Why a focus group?*

In qualitative research, focus groups are a data collection method that capitalize on group or collective knowledge, through a process of “co-construction of meaning” by participants whose knowledge or experiences are generated within a community (Angeles, 2020a). The research of the ISC Project is grounded in this constructionist approach to the topic of social animation (Angeles, 2020a) - meaning that we believe the focus group setting would allow participants to create meaning through discourse of shared experiences (of UBC Vancouver campus spaces, involvement in sustainability initiatives, etc.), to illuminate connections between individual and collective understandings of sense of place, community, wellbeing, participation, and engagement.

The focus group was designed to assess student conceptions of sustainability and gauge interest for specific interactive design and use options within the ISC space, as well as to explore deeper discussion of the desired impacts of the ISC. To diversify the sources of data collected, a series of group discussion questions (for verbal-textual data) and a participatory drawing exercise (for visual-spatial data) were designed. The focus group design is further elaborated in Section 3.2.

An important consideration in the research methodology of the ISC Project is that this qualitative research is iterative and cyclical in nature. An iterative approach is a systematic process where the elements of the research design interplay with each other in a flexible and ongoing manner in response to new information as it is collected. According to Mills et al. (2010), “mistakenly criticized as repeatedly changing the objectives of the study, and as lacking rigor, an iterative approach is valuable for its sensitivity to the richness and variability of data and for ensuring data address the study's objectives” (p. 504).

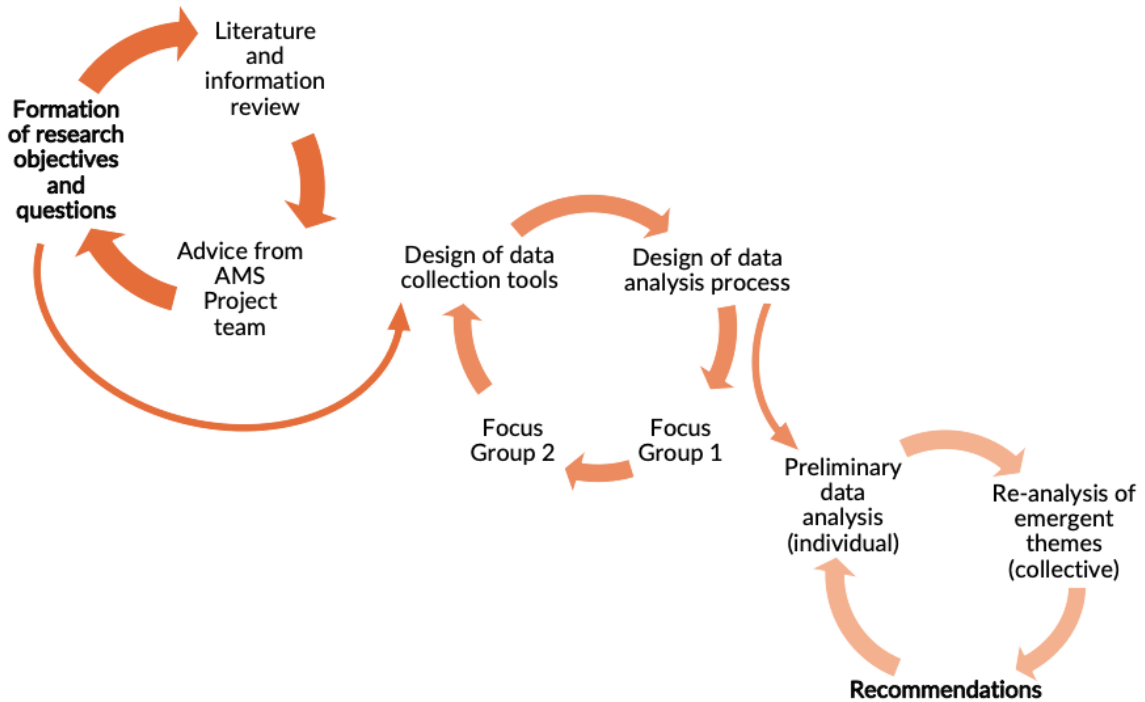


Figure 5. Visual explanation of the ISC Project's iterative approach to research design and analysis.

Figure 5 provides a visual explanation of the ISC Project's iterative approach to research design and analysis. In the initial research design, the research questions were broader and the project scope was much more ambitious - including data collection through individual interviews, tactical trials, and a quantitative survey to undertake a mixed methods approach. Upon discussion with the AMS team, the scope of the ISC Project was refined and the research questions and data collection methods adjusted to better suit both the aims and the capacity of the project, considering timelines and research team resources. During the data collection process, information and dynamics from the first focus group informed the delivery of the second focus group - the focus group questions themselves were not explicitly changed, but recommendations for facilitation helped improve the quality of data collected. The iterative approach was also applied to the data analysis - this is further discussed in Section 3.3.

### 3.2 Focus Group Process and Design

In gathering data regarding student interests and preferences for the ISC, as well as student understandings of 'sustainability', we felt the process should be inviting and interactive, utilizing creative and participatory engagement methods. Astbury's "emerging typology of inviting landscapes" (2013, p. 80) was useful as a framework for creating questions and activities for the specific design of the focus group - see Table 1 for the principles that we felt were most relevant to guiding our thinking on determining the data necessary to answer the proposed research questions of the ISC project.

Table 1. Principles of the emerging typology of inviting landscapes (Astbury, 2013) used to inform the focus group design of the ISC Project.

Principle of inviting landscapes	Characteristics
<i>Permission to enter</i>	How is the space is open, inclusive, accessible
<i>Change is possible</i>	How is intervention and change seen and encouraged in the space
<i>Challenge-posing</i>	How does the space present problems to be solved in ways that call on skills and imagination of users
<i>Community venue</i>	What is social space, comforting infrastructure, informal
<i>In the presence of nature</i>	How are signs of stewardship and nature made evident through the landscape or through interpretation

With these principles in mind, a set of focus group discussion questions were designed to gather verbal-textual data, and an accompanying visual-spatial data collection tool (in the form of a participatory drawing exercise) was designed.

### *Differences in the data*

Working from the understanding that treats discourse (text) as the central organizing principle of meaning-making and construction (Angeles, 2020a), the verbal-textual data is the core of the ISC Project data. The decision to use a form of visual-spatial data collection in the ISC Project was driven by one of the core aims of the research questions – to understand student interests in the physical infrastructure and design of the new ISC space. Visual-spatial methods can describe spatial relationships, appearances, and desires, and therefore allows for richer and deeper understanding of these student interests, when analyzed in conjunction with the verbal-textual data (Angeles, 2020b).

The visual-spatial data tool that we decided to employ in the data collection was a participatory drawing exercise (Angeles, 2020b). Focus group participants were asked to draw and write on a blank template rendering of the ISC space, to design and envision their preferences for physical infrastructure, use, and programming. In this sense we matched the tool to the data we were trying to collect - we felt that this exercise would allow participants to creatively and independently express their perspectives and ideas for the design and impacts of the ISC space.

See Figure 6 for an explanation of how the research questions (outlined in Section 1.4) are connected to the questions that were designed for the focus group, and how these questions contribute to both the verbal-textual and visual-spatial data tools. Note that some of the



discussion questions provided data for both the verbal-textual and visual-spatial elements - this demonstrates how the relationships between questions were considered in the data analysis.

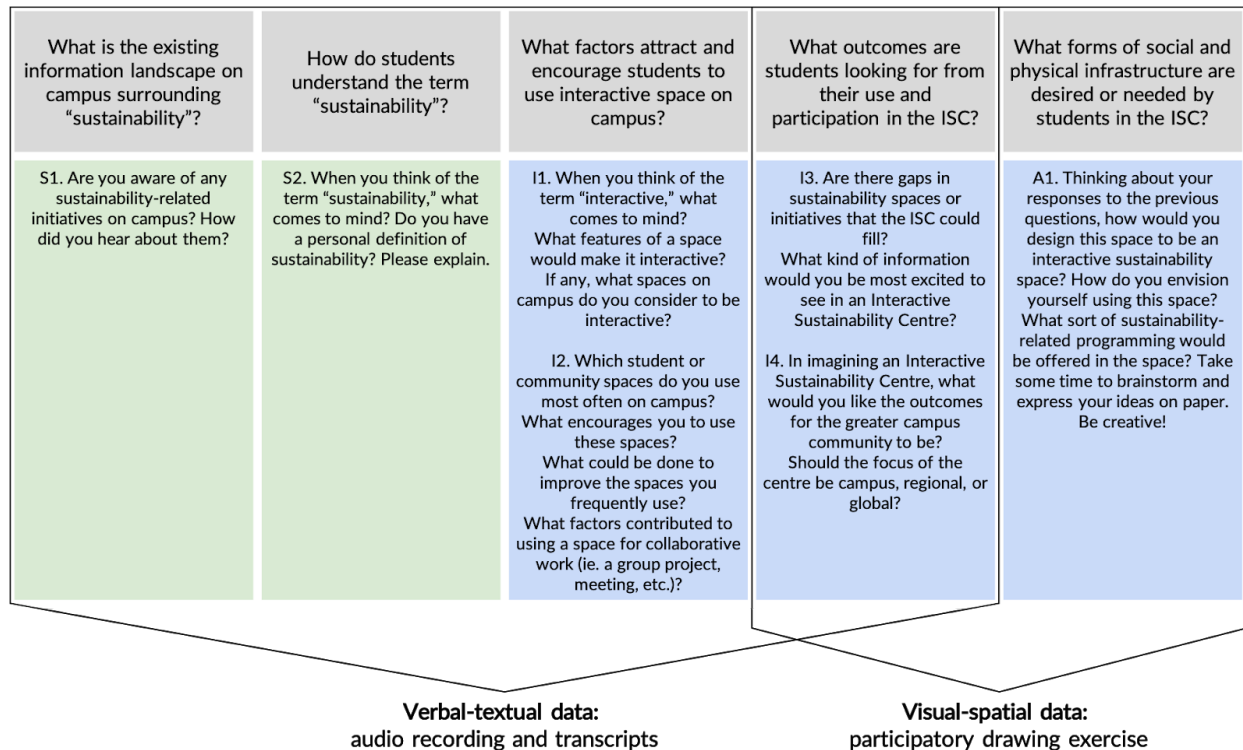


Figure 6. Graphic representation of the ISC Project focus group design, demonstrating how the research questions link to the verbal-textual data and visual-spatial data collection elements of the focus group.

Following the first discussion about sustainability and interactivity and the participatory drawing exercise, we conducted a second discussion about the renderings that AMS had previously designed for the new ISC space, to discern student preferences for the different spaces. See Appendix B for the complete Focus Group Design, including the complete list of questions.

The target demographic of the focus groups was current UBC students who attend the Vancouver campus. This decision was made to align with the AMS goal of understanding a wide variety of student perspectives for the ISC space. Recruitment was conducted by both AMS and SEEDS, through their digital communication channels, including email and social media posts. The research team also undertook some in-person recruitment efforts in the NEST Building the day of the focus groups. We ultimately conducted 2 focus groups with a total ten participants - Table 2 provides the organizational details of the focus groups. See Appendix C for the anonymous demographic breakdown of the focus group participants, which will be discussed in Section 5.2.

Table 2. Organizational details of focus groups conducted in the ISC Project.

	Date and Location	Research Team Facilitators	Participants
Focus Group 1	February 11, 2020 2:15PM-3:45PM NEST, Room 2515	Winter Cameron Tecla	2 students
Focus Group 2	February 13, 2020 2:15PM-3:45PM NEST, Room 2514	Jennifer Devin	8 students

Both focus groups were 1.5 hours in length and were asked the same sets of questions in order to explore participants' relationships to sustainability and interactive spaces. In both groups, student answers played off of each other. The first focus group was able to obtain in-depth knowledge due to the intimate setting with their 2 participants, while the second focus group was able to get a diversity of thoughts and opinions from their many participants.

The data from the first discussion, the participatory drawing exercise, and the second discussion were all analyzed concurrently in an iterative process, described in Section 3.3. The findings from the focus group data are discussed in detail in Sections 4.1 and 4.2.

### 3.3 Data Analysis Methodology

The primary goal of qualitative data analysis is to “locate meaning in the data”, through the design of appropriate tools and systematic planning, and an analytic objective that considers the purpose and audience of the data is essential to locating meaning (Guest et al., 2012).

For the ISC Project, the purpose of data collection is to gather student perspectives on design and use of the ISC space. The primary audience is the AMS project team.

Given these considerations, the analytic objective was to generate student-driven recommendations for AMS for physical design and programming of the ISC space.

Our research team planned to locate meaning in the data collected from the focus groups through an iterative data analysis approach (seen in Figure 7):

1. **Preliminary analysis**, conducted by individual research team members, of specific sections of the verbal-textual and visual-spatial data to identify emergent themes.
2. **Re-analysis** of the data using the emergent themes drawn from Step 1, conducted by the research team as a collective, to discern conclusive themes.
3. Use of the conclusive themes identified in Step 2 to inform the **recommendations** put forward by the research team to AMS. The initial data analysis was then reviewed in light of the recommendations, to determine if any new themes or ideas emerged.

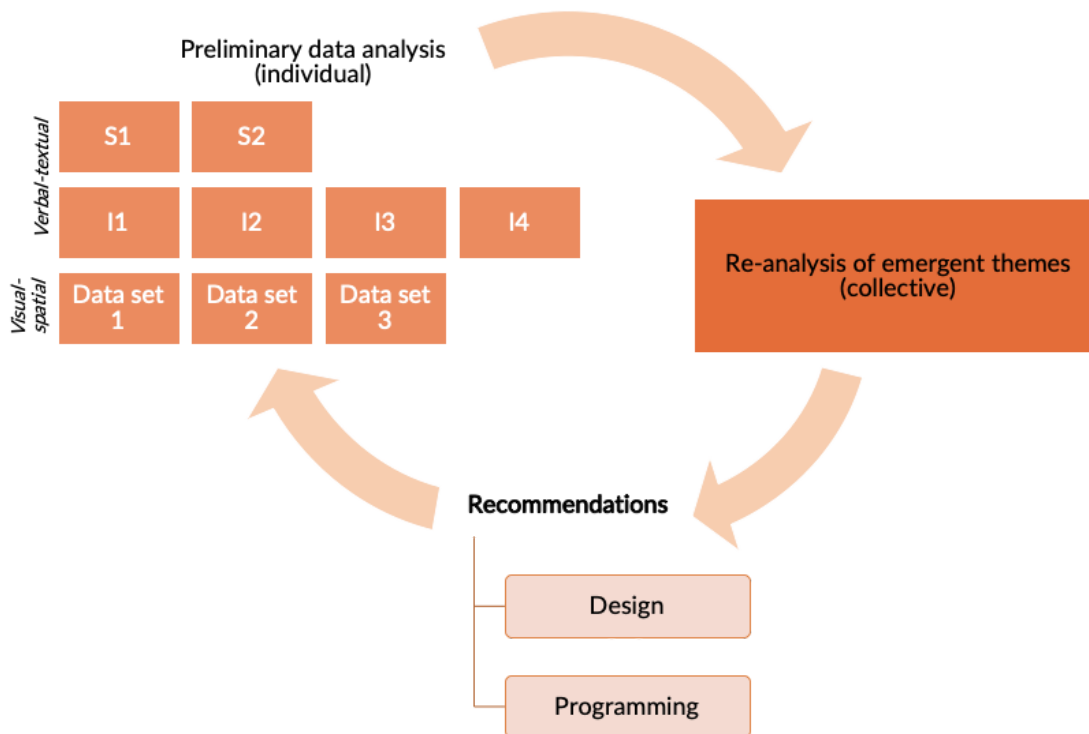


Figure 7. Visual explanation of the ISC Project's iterative approach to data analysis.

In order to proceed with the preliminary analysis, it was necessary to develop a pre-analysis list of possible codes, which are textual descriptions of the semantic boundaries of a theme (Guest et al., 2012). Possible codes were identified by thinking of themes that we expected to see given the questions we were asking in the focus group - see Appendix D for the preliminary codebook developed by the research team. These codes were used to assist in the structuring of our preliminary analysis, where individual team members analyzed the verbal-textual data responses to individual focus group questions and the visual-spatial data generated from the participatory drawing exercise. It should be noted that this potential codebook was not meant to be a prescriptive or inflexible analytical framework - we were also open to the unforeseen and unexpected themes that emerged in the data during the preliminary analysis.

In our collective re-analysis we did not treat individual focus group questions in isolation from one another but rather sought to identify themes across the two focus groups, and across questions. We acknowledge that because of the interactive nature of focus group discussions, where knowledge is elicited from the collective, the responses to specific questions may hold wisdom that also addresses other questions.

Some considerations that should be kept in mind regarding the data findings from both the verbal-textual and visual-spatial data include the differences in recruitment (Focus Group 1 had 2 total participants, while Focus Group 2 had 8 total participants), and differences in facilitation between focus groups (variation in wording of questions). Another important point is that the ISC Project's data frame is limited by the fact that we did not conduct individual interviews about the ISC space (due to capacity of the research team size).



Quantification of the response data is complicated by the fact that the ISC Project only consisted of focus group discussions. While in a survey or individual interview data collection method, individuals tend to explicitly state all of their held perspectives, in a focus group setting participants do not necessarily do so - instead they may simply not speak, or only provide body language clues, if they feel their perspective has already been stated by another member of the focus group. We also felt that quantifying the number of times a particular code occurred in the data would be potentially misleading, because it removes the occurrence of the theme from its context in the discussion. In this way, the data analysis takes an ethnographic approach that “values a careful treatment of context, insisting that it is impossible to separate speech data from the history under which it was obtained” (Angeles, 2020a).

It was outside the scope of the ISC Project to conduct true mixed-methods (quantitative and qualitative) data collection and analysis. However, when both sources of qualitative data that were gathered are considered together in a concurrent analytical framework (Guest et al., 2012), the visual-spatial data provides a powerful visualization of student preferences for the new ISC space, which is complemented by the verbal-textual data gathered in the facilitated discussions. Both the verbal-textual and the visual-spatial data will be useful for AMS in their decision-making on the ISC project.

## 4.0 KEY FINDINGS

Focus group participants were keen to share their perspectives for the ISC. The following Section provides a summary of the key findings of the verbal-textual and visual-spatial data collected during the focus groups.

### *4.1 Verbal Textual Data*

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We employed two simultaneous methods of verbal data collection in both focus groups - a transcriber and live audio recording - to capture the full extent of the participants' conversations and remarks. Language has dimensions of meaning and semantic content that provides sufficient qualitative data when utilized to inform literal transcripts. Collecting such information with this method allowed us to extract material of interest from the dialogue relevant to our project objectives. As per the requirements of the BREB for this project, the complete transcripts of the Focus Group discussions are kept securely on a member of the project team's laptop.

The focus group design strategically structured the questions to guide conversation in a logical direction. The initial questions surrounding personal perceptions and knowledge of sustainability primed participants to think about its relationship with space and interactivity. As part of our objectives, it was important to gather the extent of participants' awareness of on-campus sustainability initiatives to determine whether an obvious pattern of information sourcing existed. It was also important that we collected opinion-based data surrounding space and interactivity to assist the subsequent visual-spatial data collection.

#### *What did we learn?*

From both discussions held, sustainability was defined in many different ways, but there was a general consensus that it related to individual and collective efforts in curbing human ecological footprints. Our verbal data pointed to the prominence of consideration for future generations and controlling resource consumption as primary 'efforts'. We determined from the dialogue that people view sustainability as a flexible term; interdisciplinary, co-opted, and often overused.

It was clear that participants were mostly informed by social media such as Facebook, being familiar with publicized rallies such as the fossil fuel divestment and the climate strike on campus. Of the ten total participants, one was involved in both rallies as a member of the climate hub. But generally speaking, participants had limited knowledge of on-campus sustainability initiatives. Only a few tangible examples were cited (paper cups, CIRS building design).

Participants were receptive to our focus group questions relating to space and interactivity. They provided reflection on specific spaces that foster a sense of engagement through tactility or through nurturing a social environment via purposeful design. The Nest was frequently mentioned

as a welcoming public space that fosters collaborative work, referring to its clear social norms, its high ceilings, sense of openness and natural light.

Other spaces being frequented by participants were mentioned for their functionality and utility, which they perceived as being two critical determinants of a space's interactivity. Utility such as a microwave or water source could be introduced to space as a means of attracting users.

*"Yeah, I think it's important that interactive space is more than just a physical place to, but actually has a use value. It needs to meet needs of the community, and actually provide something useful. I also think it needs to be open and accessible, so that people, new people can come in and experience it."*

(Speaker 7, Focus Group 2; Feb 13, 2020)

*"Now I'm kind of thinking of those swings that were put up. I feel like when I hear 'interactive' it's like something that you wouldn't normally see. And I've never used them ... but I think of that as ... interactive is out of the ordinary: almost something you're drawn to doing. Now I'm gonna want to go on one of those swings ..."*

(Speaker 1, Focus Group 1; Feb 11, 2020)

Participants also pointed to the importance of flexibility in the arrangement of space to allow users to define its function, whether for collaborative work or simply to encourage its use by creating a better sense of community.

*"I think spaces where you understand the unwritten social codes, and as people have been saying, whether it's a social space or a quiet space, not hierarchies or legacies - like you're a graduate student you go here and undergrads don't, or things like that. As well as I was thinking about physical accessibility. The movable furniture, but also that it all has space for a wheelchair to get around in it - all kinds of different ways that people can or can't access this space. I think UBC is big and crowded, and if this is intended to be interactive, I wonder about it being a quiet space."*

(Speaker 2, Focus Group 2; Feb 13, 2020)

*"A space I use a lot for collaborative work is the resource lounge ... One part that I really like about it is a sense of community - when you go there, there are people who share your values. I think the flexibility of the space, that you can move around the furniture to suit the meeting style that needed, and having outlets is a huge thing for me so I can always charge my computer. I think versatile furniture is always good."*

(Speaker 7, Focus Group 2; Feb 13, 2020)

When participants discussed the proposed sustainability center, interactivity was held as being an important component in displaying informational resources. There was an expressed desire to have access to research-based information including tangible ways people could get involved. Ideas for individual engagement was a recurring idea as participants suggested that a ladder of engagement could be promoted. But the general focus surrounding the space was concerning initiating collective change.

*"I find it hard to find research based or scientific based information online, so even providing ways to find scientific researcher backed information about sustainability."*

(Speaker 1, Focus Group 1; Feb 11, 2020)

*"... for a lot of people the individual lifestyle changes can feel disempowering, in a way because you know that that's not going to solve the problem on it's own, like we need large scale systemic change at the government level. So that's why I think talking about things like voting and policy change, and civic engagement is really important. One thing that could be done is presenting sort of like a ladder of engagement for the different ways that you can engage and kind of meeting people where they're at. Kind of the lowest barrier actions, which are often more individual lifestyle changes, to highest barrier things like running for office. So that's an option. And then another thing that I think is really important is presenting information on the intersections between environment, like sustainability issues and social issues as you were talking on human rights, justice, indigenous rights, all of those things, is really critical."*

(Speaker 7, Focus Group 2; Feb 13, 2020)

*"I think the interactive part is to be educating us on sustainability, right, like the student population. It would be nice if they could educate the admin on it too, you know what I mean, that it goes upward too."*

(Speaker 2, Focus Group 1; Feb 11, 2020)

Additionally, participants were concerned that the center would be used as a promotional tool, or a 'front', and suggested that it be student led. The center was imagined as a space for civic engagement where diverse campus groups could come together around sustainability issues, rather than being siloed into different learning spaces and communities.

*"And it'd be nice if it was a hub where students' voices were heard ... and when student voices are heard that things actually get done."*

(Speaker 2, Focus Group 1; Feb 11, 2020).

*"Bringing different faculties on campus to speak, but I think also bringing them to work together, because we're often siloed into our different learning spaces or communities because we can't address things with - as we learned from last night, just environmental, technological developments to fix climate change - we have to have all the things."*

(Speaker 2, Focus Group 2; Feb 13, 2020)

*"It'd be really bad if it opened and it was like "this is how UBC is making our lives better ... this is what UBC does and this is the way UBC is doing it". It's like, this is how UBC is working ... an advertisement, a public thing. If it was something like that, I probably would not go to it ever."*

(Speaker 2, Focus Group 1; Feb 11, 2020)

## 4.2 Visual Spatial Data

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For the participatory drawing exercise, participants drew and discussed spatial features on blank renderings of the ISC space that might facilitate desirable activities such as lounging, studying, or group work in the ISC. Their drawings are shown in Figure 8a, 8b, and 8c (next page). Larger versions of the drawings can be found in Appendix F.

### *What did we learn?*

Participants showed a preference for a multi-use comfy lounge and workspace, achieved through flexibility in furniture. Beanbags, or lightweight folding chairs could be manipulated to fill the space for lounging or clear the space to facilitate through-movement. Furniture in the room could be oriented towards a screen for presentations, or chairs could be oriented inward to facilitate round-table discussion. A white board or chart paper could also be utilized for group work and presentations. This level of flexibility would reduce the burden on the AMS to anticipate the needs of the campus population as a result of fixed interior design. By avoiding prescribed use of the space, the ISC could better accommodate for the diverse needs of various campus groups.

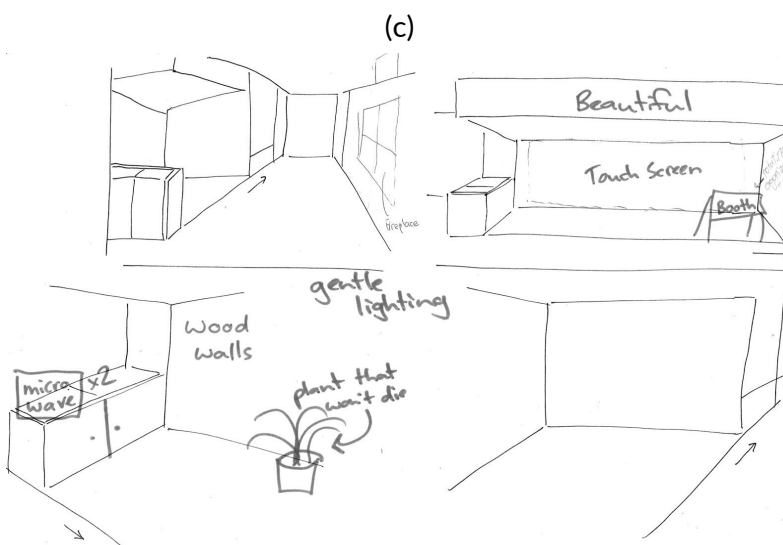
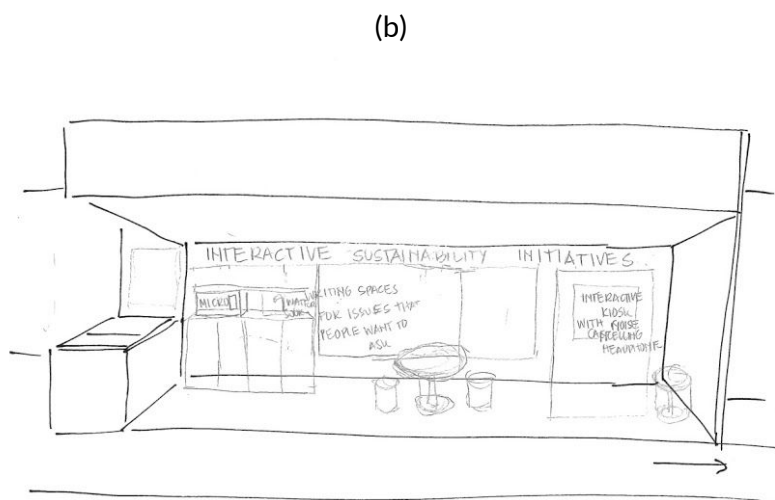
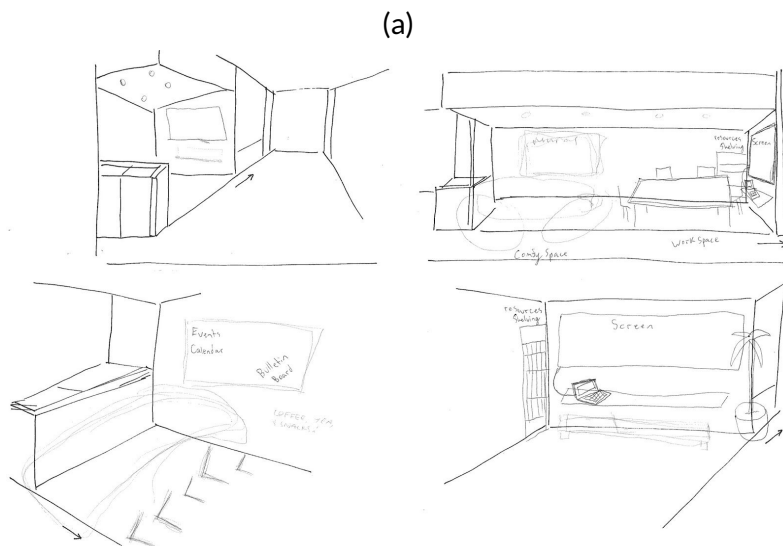
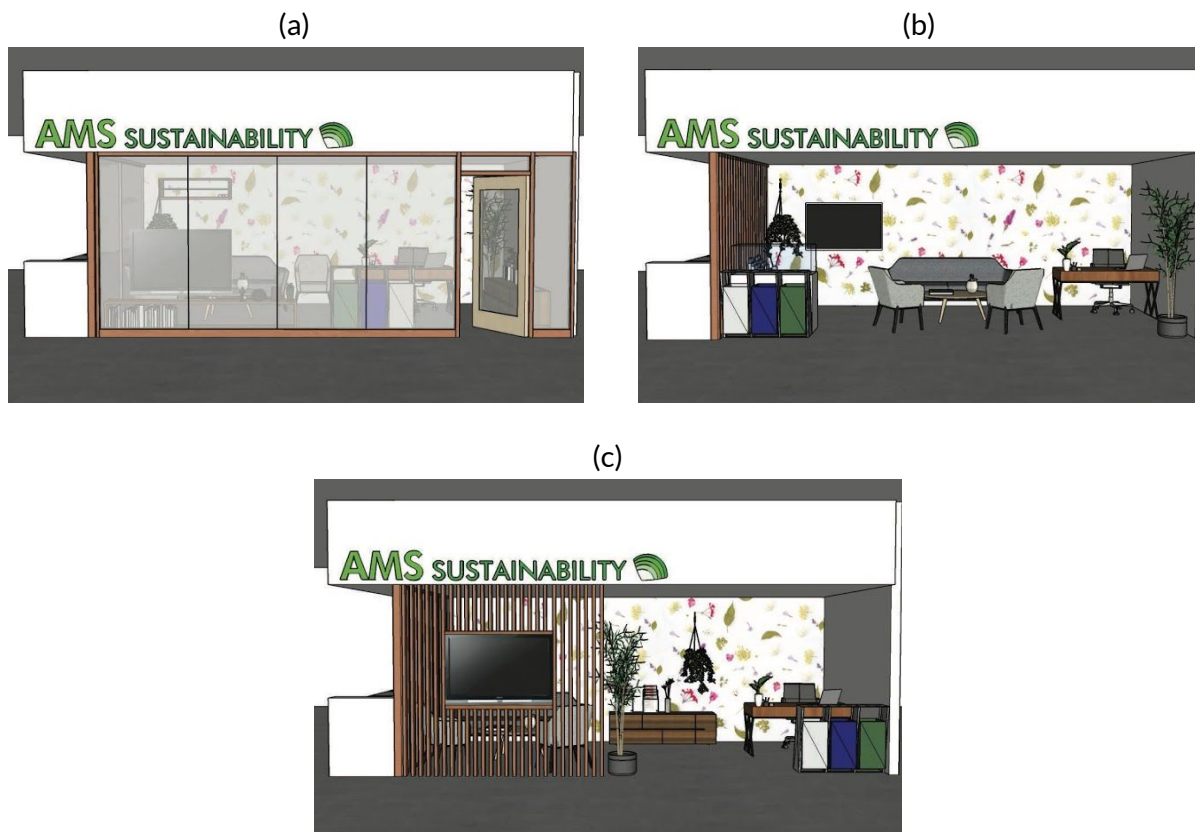


Figure 8. Participatory drawing exercises from the focus groups.  
 (a) Focus group 1 - drawing 1, (b) Focus group 2 - drawing 1, and (c) Focus group 2 - drawing 2.

In their discussion about the dissemination of sustainability-related information, participants recommended installing an interactive monitor that could be used as a means to gauge student perceptions on the topic of sustainability. The screen could engage users with information and activities related to the campus population through questions posed on the monitor each week. Participants liked the idea of the screen being placed within the center rather than facing outside because it could allow for more versatile uses like facilitating workshops and information presentations. In addition to digital resources, it was suggested that the ISC could include books, fliers, pamphlets, and other resources articulating sustainable living practices.



*Figure 9. Renderings for the proposed ISC with (a) a glass enclosure, (b) no partition, and (c) a wooden partition.*

There were suggestions that programming of the space should come from a bottom-up approach driven by student groups. The space could facilitate bidirectional communication on involvement by utilizing a poster board to convey how users can get involved through the promotion of events, petitions, and calls to action. Contribution to the poster board would open to all, and sustainability-related campus groups would be encouraged to contribute freely. The ISC could provide resources to campus groups for workshops and demonstrations, including the provision of materials for making signs and banners. The ISC could provide a space not only for the institution to communicate sustainability-related information to students, but also generate ideas and solutions among the greater campus population.

Following the drawing activity, participants were shown three proposed renderings, drafted by the AMS. These renderings are shown in Figures 9a, 9b, and 9c. Participants voiced a preference for open space, avoiding dividers and enclosed walls. Renderings depicted in Figure 8b and 8c were praised for their open design, which seemed more inviting. However, the participants favored the half-wall for it was a compromise of privacy and openness between Figure 8a and 8b. Contrary to initial value put on an internally oriented digital screen, it was stated that outwardly facing program information would increase accessibility, making the space feel more welcoming to unfamiliar users.

Participants felt it was important to utilize wall space in order to mitigate crowding the minimal floor space. This could be accomplished with the information displays, touch screens and digital signage. With regard to the furniture, participants did not like the idea of replicating other study spaces by crowding both conference tables with lounging furniture. It was suggested that furniture be interactive, usable, and potentially constructed from sustainable materials, rather than fancy and cluttered. For the space to be inviting, and to communicate its sustainability principles, participants expressed their interest in wood and decorative plants. It was an important consideration that the space will be in a basement with little exposure to sunlight, determining the need for elemental features. Wood planked walls, for example, would serve for better aesthetics than the proposed wallpaper in the AMS renderings. The space should use natural colors and materials to set a relaxed atmosphere, and differentiating. Plants would help to serve this purpose in addition to filtering air.

Both the verbal-textual and visual-spatial data collection were invaluable for our research. The richness of the results from the focus group participants significantly contributed to our own understandings of sustainability and interactive spaces, and allowed us to critically consider emergent themes and resultant recommendations for the ISC space.



## 5.0 ANALYSIS & RECOMMENDATIONS

The following section outlines the key themes and takeaways from the research data, as well as recommendations for AMS on ISC implementation including short, medium and long-term actions. The research team has captured and proposed a program planning strategy that the AMS and other stakeholders can pursue, and things to keep in mind, as the AMS develops the programs with student groups.

### 5.1 Themes



Figure 10. Conclusive themes focus group participants want to see represented in the ISC.

Several themes emerged during the focus groups as participants shared stories and ideas of elements they would like to see represented in the ISC - conclusive themes are shown in Figure 10. As described in the iterative data analysis process (Section 3.3), the themes were derived by the research team as a collective from a preliminary coding list created before we ran the focus groups, as well as the individual analysis of verbal-textual data from focus groups (Section 4.1) and ideas articulated during the visual-spatial exercise (Section 4.2). These themes all represent the high-level ideas that participants touched on multiple times throughout the focus groups, and several of them intertwine. It is also important to note that even though some of the terminology varies from what was said verbatim in the verbal-textual data, the authentic representation of participants' intentions, and communications of their ideas are reflected in the themes.

When we first created our preliminary coding list (see Appendix D), we attempted to imagine ourselves as focus group participants and thought of words or phrases we might use when answering the focus group questions. For each question we thought of several potential topics that could arise during the focus groups, as well as several sub-topics. For example, potential coding for responses to our first questions concerning sustainability on campus:

*S1. Are you aware of any sustainability-related initiatives on campus? How did you hear about them?*

This is a two-part question, so we indicated two sub-topic codes:

- *Sustainability-related initiatives*
  - Student-led initiatives
  - Administration-led initiatives
  - Research projects
- *Sources of information*
  - Newsletters
  - Social media
  - Word of mouth

Our team put a lot of thought into crafting our focus group questions, and we had also completed the literature review on sustainable and interactive centres. As we realized during the focus groups, we were better-equipped to answer certain questions than participants, and we had also considered more in-depth and focused answers in our preliminary coding than we were actually able to obtain from many participants. Under the sub-topic of “sustainability-related initiatives” listed above, we found that participants spoke organically about things they had observed around campus, not differentiating between student-led and administration-led initiatives (for example, general knowledge that there was a \$.25 disposable cup fee). As the focus groups continued, conversation topics led to participants distinguishing between student initiatives (such as the Climate Hub) and administration initiatives (such as the Climate Emergency). Even though participants did not specifically articulate this in their answers to S1, this awareness was a present thread throughout the focus groups and manifested itself in the emerging theme: “*Student-driven*,” which is how many participants would like to see the ISC operate.

Detailed List of conclusive themes from *Figure 9*:

- (1) *Idea-generation* – Focus group participants believed the ISC should be a place to foster ideas and innovation. It could operate as a hub that would produce sustainability-related ideas for campus.
- (2) *Student-driven* – It was important to focus group participants that the ISC be student-driven (i.e. through clubs), and not administration-driven (i.e. top-down UBC approach). This theme ties-in closely with transparency.

- (3) *Transparency* – Can be showcased by sharing what AMS and UBC are doing about sustainability on campus, and how they are working with student groups. It is important that the ISC is not just an “advertisement for UBC”
- (4) *Inclusive* – Ensuring the space is open and accessible for all students was important to focus group participants. This includes both students who are very knowledgeable about sustainability, and students who don’t know anything about it. This theme ties-in closely with welcoming.
- (5) *Welcoming* – Providing an inviting and welcoming space will draw more users to the ISC. If it is welcoming, it will be more inclusive for all types of students and people who wish to visit the space.
- (6) *Learning* – As an interactive centre, learning should be one of the main goals of the ISC. This emergent theme was part of a broader discussion with the focus groups that found interactive spaces were often effective because they promoted learning, and were spaces that successfully drew visitors in.
- (7) *Collaborative* – To encourage sustainability on campus, the ISC should promote collaboration across different working groups. Either to provide a space where collaborative functions between students can take place, or to showcase collaborative efforts between student groups and AMS.
- (8) *Tactile* – Participants spoke a lot on how having things to touch and interact with draws people in. By having something like a touch screen, or an installation, the ISC will be able to attract more users to the space.
- (9) *Functionality* – The importance of the ISC working as an *interactive centre* came up in the focus groups. Since the space is limited, it is important that it is used correctly to foster collaboration to ensure it is successful. Focus group participants found that the desk included in the renderings contrasted with the ISC’s purpose as an interactive centre.
- (10) *Flexibility* – Using moveable or multi-purpose furniture was highlighted by focus-group participants. This would allow the space to be used for club activities, speakers, working groups, or independent study sessions to suit users’ needs.
- (11) *Spatial Engagement* – How do ISC users engage with the space? Having touch screens, bulletin boards, or other elements present in the centre that users could interact with would draw more people to the centre.
- (12) *Community* – the ISC needs to sustain a community in order to be successful in the long-term. By acting as a hub for sustainability on campus, different groups could post/ advertise at the ISC about upcoming sustainability workshops, and guest speakers, effectively growing and maintaining the sustainability community on campus.
- (13) *Climate* – Many focus group participants associated sustainability with the environment and climate. Especially considering UBC’s recently declared climate emergency, the ISC should showcase actions that the university has taken to address

this emergency, as well as actions that students can undertake if they wish to get involved with the climate emergency.

- (14) *Openness* – When participants were shown renderings of the ISC, they liked the one that was half-open. This rendering was closed-off enough to be private for users of the space, yet open enough to attract curious people into the ISC.

## 5.2 Takeaways

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Several key takeaways emerged from the focus groups, many of them focusing on how hopeful participants feel about the ISC. Perhaps first and foremost was the gap between the sustainability needs of campus-users and their abilities to connect with sustainability initiatives on campus. Participants indicated that they would be willing to take action on sustainability on-campus and in their daily lives, but they did not know where or how to start. The ISC will hopefully be able to fill this gap for campus-users, through the ladder-of-engagement model. Participants were additionally hopeful that the ISC could bridge the communication gap that comes with engagement. Not only did the participants not know about sustainability actions they could take, they also did not know where they could currently go on campus to learn about sustainability actions. Having the ISC act as the information hub for sustainability on-campus, giving sustainability a physical home, will greatly expand the number of students who will be able to learn about these initiatives and become interested in on-campus sustainability.

Additionally, participants were wary of UBC-run initiatives, and instead favored partnerships with student groups. Many participants believed that UBC likes to take credit for the initiatives it is doing, in effect creating advertising for the school. They did not want the ISC to be an advertisement for UBC. In the ISC participants would like to potentially see a partnership with the Climate Hub, and they believed programming should build off of both student and administrative sustainability initiatives.

## 5.3 Actionable Recommendations

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### Short Term Recommendations

#### *Physical Design Choices:*

- (1) Pick the half-open wooden slatted rendering so the ISC is semi-enclosed, yet is still inviting and draws in new participants. ]
- (2) Color Palette: Use natural colors and materials to create a relaxed atmosphere and situate users. Greens, blues, and browns would serve this purpose. Materials for tables or shelves should be wood- perhaps repurposed from other parts of campus so the ISC embodies the sustainability it promotes. The color palette can also include live plants that would do well without much sunlight. As a bonus, the plants can filter air, enhance the area's scent, and contribute to an experience that engages multiple senses at the ISC.

- (3) Flexible furniture: That is easy to move, store, and reconfigure in the ISC, so participants can easily customize the layout to meet their needs.
- (4) Appliances: Having microwaves in the space will draw people in and keep the space continually lively throughout the Life building's open hours.
- (5) Touch Screens and Bulletin Boards: Installing these will visually inspire students, keep them up-to-date with on-campus sustainability initiatives, and provide them with a place to physically sign up to volunteer and attend sustainability workshops and events. The placement of the screen should be carefully considered so that students within the space will be able use it. In addition to being a dash-board for building metrics, the touchscreen should also provide opportunities for students to sign up for activities and events, assess their own carbon-footprint, or participate in another fun, sustainability-themed activity.

## Medium-Term Recommendations

### *Programming Decisions*



Figure 11. Ladder of Engagement for Users of the ISC.

- (1) AMS-Sustainability Student Groups Partnership – The ISC can build off of valuable sustainability initiatives that student-led campus groups have already begun by forging a long-lasting partnership that is built on a foundation of communication and respect.
- (2) Information-Sharing – Ensure sustainability opportunities on-campus are frequently updated, on the touch-screen and bulletin board in addition to sending out emails and newsletters, so students can easily sign up for them and get involved.
- (3) Ladder of Engagement Actions (*Figure 11*) – A variety of sustainability actions should be available and made known for users who want to get involved. For example, a small action could be remembering to bring your own reusable mug, while a larger action would be attending, or helping to organize a climate strike. After the user fulfills an engagement

action, they will slowly “climb” the ladder, undertaking more in-depth and involved actions to promote sustainability. The user can stop at whichever rung they are comfortable with.

*Figure 10, Explained:*

- (a) *Sustainability Awareness* – This is the lowest rung on the ladder of engagement, and where individuals can begin to engage with sustainability. Perhaps they have seen signs in coffee shops to bring their reusable mugs, or there is a celebrity they like who often talks about the importance of climate change and sustainability. This is where people’s interest in sustainability is peaked.
- (b) *Visit the ISC* – As an individual expands their sustainability awareness, they will have seen information leaflets advertising the ISC, or one of their friends who is sustainability-minded will tell them to visit. Since the ISC is in the Life building, it is centrally-located on campus and new visitors will be able to easily alter their foot-paths to visit. After visiting the ISC, you now have an information leaflet, a sense of where to seek further information online, and you are aware of the sustainability events taking place on campus. Additionally, you are now versed in the campus resources for sustainability (i.e. various student groups that are active in sustainability).
- (c) *Attend an ISC Event* – With the knowledge you gain at the ISC, you decide to attend an ISC event. This is a crucial step as you transition from an active observer to someone who takes part in greater actions that affect the sustainability narrative. If you are new to on-campus sustainability, you may decide to attend the event with a friend. By offering “Introduction to Sustainability” workshops (a Sustainability 101 if you will), or a talk by a well-known community activist it will be easier to get new people involved.
- (d) *Volunteer at an ISC Event* – After attending several ISC events, you are now equipped with sustainability knowledge that you would like to share. Volunteering at an event will give you a different perspective on sustainability, and the event could encompass any type of workshop, lecture, world cafe, or other activity the ISC may run. The ISC may even look at ideas from the City of Vancouver, such as their Climate Emergency Workshops, and use them as a model to get campus users to critically think about reducing their own carbon footprints.
- (e) *Organize an ISC Event* – Volunteering has shown you how certain events are organized, and you have an event idea to fill an ISC programming gap. For example, you may want to organize a beach cleanup with the Great Canadian Shoreline Cleanup to help remove trash from our beaches. Since the ISC and the sustainability groups on-campus have a strong partnership, you are able to easily secure the resources and support you need to successfully run the event. In fact, you are even able to forge a new partnership with the UBC Aqua Society, located just across the hall from the ISC.

## Long-Term Recommendations

### *Continued Engagement:*

- (1) Sustain the partnership with campus sustainability groups by offering continued support and services, and organize joint events to involve as many people as possible with on-campus sustainability.
- (2) Iterative Learning Cycle: On a monthly basis re-evaluate the ISC. See if it is performing as-intended, or if its purpose and programming have shifted. If student needs for the ISC have shifted, stay flexible and continue working with student sustainability groups to deliver the altered services the campus population needs.

In breaking down the themes, takeaways and recommendations we gained from this project, we hope the AMS will be able to take actions as soon as the ISC is up and running. Our upcoming final section will provide a detailed debrief on our thoughts and learnings from this project.



## 6.0 CONCLUSION

The final Section summarizes the research project's findings and recommendations, as well as provides a reflection from the research team on the project's process and outcomes and directions for the future of the ISC space.

### 6.1 Project Summary

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The research design for the ISC was a comprehensive process from start to finish. Our research group began by identifying our project scope, followed by developing a project methodology, and finally we analyzed collected data and processed it into tangible actions for our client to implement. Throughout this project we learned about the importance of research as an iterative process to remain flexible through project challenges, such as the condensed timeline we were working with.

Undertaking the literature review helped us frame and contextualize the ISC, allowing us to draw on other successful examples of sustainability-orientated spaces and develop our sustainability and interactive lines of questioning. The focus groups we ran provided invaluable, detailed project data that yielded key findings that were converted into ISC recommendations for AMS. As such, these short, medium and long-term actions will be major influencers in the ISC's long-term success.

### 6.2 Reflection

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Reflecting on the project as part of our planning practice, we came up with the following lessons.

*First: students are wary of a top-down approach to sustainability programming at UBC.*

In regards to the ISC, this was reflected in student responses about the physical design of the space and in its programming. In terms of programming, participants identified a need for more resources allocated to campus groups to facilitate collaborative work and encourage involvement. In the vision of the participants, the ISC would provide a space not only for the institution to communicate sustainability-related information to students, but also generate ideas and solutions among the greater campus population. Students also wanted flexibility in the physical design of the space, through open design and moveable furniture. This would reduce the burden on the AMS to anticipate the needs of the campus population and prescribe the use of the space through fixed interior design. This is true for both functionality and accessibility, as users might rearrange furniture to suit a particular purpose or to accommodate their needs.



*Second: community-based research is an iterative process.*

We revisited and adjusted research questions and design throughout the entire engagement. In this sense, we benefited from our ability to be agile. Focus groups proved to be a useful tool in our qualitative data collection, given the scope of the project. Participants were engaged and eager to contribute collaboratively in response to our questions, drawing on their shared experiences.

*Third: demographics and representation played a crucial role in the data we collected.*

As researchers, we must critically think about the external validity of our data when we consider its implications across UBC as a whole (Guest et al. 2012). For example, our focus groups were split 50/50 between graduate and undergraduate students, while the UBC graduate student population is actually only 17% (Redish & Mathieson, 2017). In addition, we had 3 male participants and 7 female participants, which is more than the small majority of female students UBC enrolls (Redish & Mathieson, 2017). Further, three of our focus group graduate student participants were from the education department, and two of them were from the planning department. Even though these participants were not involved with sustainability on-campus, and were able to give excellent feedback for a sustainability baseline, many of these students mostly stayed near their departmental buildings on campus. It is important to be aware that graduate students at UBC utilize the campus differently than undergraduate students, and their programs are typically a shorter length of time than an undergraduate's. With a high turnover demographic, it is important to consider ways for students to get involved with on-campus initiatives during their time at UBC.

This highlights the importance of having a diversity of channels for recruitment to achieve a representative sample. If we intended to collect data that represents the student body as a whole, then we needed to employ a survey method. Due to time constraints on the project, and the desire to obtain in-depth feedback about the proposed ISC, we limited our methodology to the focus groups. Additionally, in order to meet the criteria of community-based participatory action research provided by Burns et al. (2011, p. 14), more diverse ISC stakeholders must be included in the research process, including problem-definition, tool development, analysis, and dissemination steps.

### *6.3 Future Directions*

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To advance the objective of the AMS to create an ISC that represents student preferences and perspectives about sustainability on campus, the AMS would benefit from additional focus groups with members from sustainability-related campus organizations. This portion of the campus population is well positioned to identify existing gaps in sustainability-related programming at UBC. Further, many student groups experience a great deal of organizational turnover between

semesters, and their success relies on their ability to attract new membership. Therefore, stakeholders from sustainability-related campus groups likely have many insights in regards to engaging segments of the UBC population that are not already involved in sustainability on campus.

*Through the Interactive Sustainability Centre, the Alma Mater Society has an opportunity to facilitate a truly student-centered and student-driven hub for motivating action on sustainability issues at many scales, across the UBC Vancouver campus and beyond.*

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**Placemaking for a Cause:  
Exploring student interests in a UBC Interactive Sustainability Centre**

**Context:** The UBC Alma Mater Society (AMS) is proposing the development of an Interactive Sustainability Centre (ISC) on the UBC Vancouver campus that aims to promote community engagement and build cohesion among sustainability stakeholders. This research project aims to explore the interests of students who will be using the ISC space, including desired impacts of the ISC and preferences for social and physical infrastructure.

**Research Goal:** This research project will focus primarily on creation of the user experience of the ISC space by exploring student interest in social and physical sustainable infrastructure for the space. Other research goals include identifying impacts the Interactive Sustainability Centre would bring to students on and off campus, and identifying user interpretations of “sustainability” with regard to environmental and social considerations.

**Research Questions:**

How can an interactive space in a student centre facilitate the sharing and uptake of innovative ideas in sustainability on campus?

*Secondary research questions:*

- What factors attract and encourage students to use interactive space on campus?
- What forms of social and physical infrastructure are desired or needed by students to facilitate interaction in the ISC?
- What outcomes are students looking for from their use and participation in the ISC?
- How do students understand the term “sustainability” with regard to environmental and social factors?
- What is the existing information landscape on campus surrounding ideas and practice of “sustainability”?

**Methodology:** This project will begin with a literature review with the following goals: (1) analyze planning documents for the UBC Vancouver campus, including the Student Driven Sustainability Strategy, Wellbeing Plan, and Green Building Plan; (2) understand the methods used in designing interactive spaces and sustainability programs at UBC and other universities/institutions; and (3) understand the current landscape of sustainability information and practices on the UBC Vancouver campus.

Two focus groups will be the primary mode of qualitative data collection to address the proposed research questions. Document analysis of past ISC design and implementation documents will also be undertaken for secondary data collection to provide context to the focus group data. The target demographic of this project is current UBC students who attend the Vancouver campus. Potential participants will be provided by the SEEDS project coordinator and AMS client.

Focus group questions will be designed to assess student conceptions of sustainability and gauge interest for specific infrastructure design and use options within the space, as well as to explore deeper discussion of the desired impacts of the space. Time and budget permitting, participant observation of student use of other interactive campus spaces and trials of design and infrastructure options will be undertaken within the focus group design.

Appendix B - Focus group design outline

**Focus Group: AMS Interactive Sustainability Centre - Handout**

The UBC Alma Mater Society (AMS) is proposing the development of an Interactive Sustainability Centre in the UBC Life Building that aims to promote community engagement around sustainability on campus, acting as a co-learning space for students and sustainability stakeholders. Your input on preferences and desired impacts will be used to inform the design of the space.

On behalf of AMS, thank you for your time and insights today. Before we begin, please take a moment to answer the following questions:

What year did you first enroll in UBC?

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What program are you currently enrolled in?

---

If any, what student groups are you involved with?

---

Are you an international student (circle one)?      Yes    No

If yes, please specify country of origin:

---

What languages do you speak at home, work and school (please specify all)?

---

Please tell us your gender:

---

Please tell us your ethnicity:

---

*Note: This focus group is being conducted by students of the School of Community and Regional Planning. All data will be kept confidential and will not be used to identify individual participants.*

## Focus Group: AMS Interactive Sustainability Centre

5 min intro, 5 min wrap up

### Discussion Questions

#### Sustainability on Campus: (~10 mins)

S1. Are you aware of any sustainability-related initiatives on campus? How did you hear about them?

S2. When you think of the term “sustainability,” what comes to mind? Do you have a personal definition of sustainability? Please explain.

---

#### Interactive Spaces: (~40 mins)

I1. When you think of the term “interactive,” what comes to mind? (5 min)  
What features of a space would make it interactive?  
If any, what spaces on campus do you consider to be interactive?

---

I2. Which student or community spaces do you use most often on campus? (5 min)  
What encourages you to use these spaces?  
What could be done to improve the spaces you frequently use?  
What factors contributed to using a space for collaborative work (ie. a group project, meeting, etc.)?

---

I3. Are there gaps in sustainability spaces or initiatives that the ISC could fill? (10 min)  
What kind of information would you be most excited to see in an Interactive Sustainability Centre?

---

I4. In imagining an Interactive Sustainability Centre, what would you like the outcomes for the greater campus community to be? (10 min)  
Should the focus of the centre be campus, regional, or global?

---

## Specific Space Renderings - Interactive Activity (~30 mins)

> *Distribute 11x17" printouts of blank renderings (small groups)*

A1. Thinking about your responses to the previous questions, how would you design this space to be an interactive sustainability space? How do you envision yourself using this space? What sort of sustainability-related programming would be offered in the space? Take some time to brainstorm and express your ideas on paper. Be creative! (7 min)

> *Display large renderings of options (plenary)*

A2. Thinking specifically about rendering [A/B/C], what are the strengths of this space? What are the weaknesses? Thinking about the interactive sustainability space that you just designed, what is one thing you would you incorporate into these renderings? (10 min)

A3. Which of these renderings do you think is best for collaborative work? (3 min)

A4. Which of these renderings do you think is best for individual work? (3 min)

A5. What kind of uses can you imagine for the spaces shown in these renderings? (5 min)

A6. For the renderings that you prefer, what feelings or emotions do they generate in you? (5 min)

A7. Is there anything you would like to add that was not mentioned so far? (5 min)



## Appendix C - Focus group participant demographic information

Focus group date	What year did you first enroll in UBC	What program are you currently enrolled in	If any, what student groups are you involved with	Are you an international student	If yes, please specify country of origin	What languages do you speak at home, work and school (please specify all)	Please tell us your gender	Please tell us your ethnicity
02/11/2020	2017	Master of Arts - Counselling Psych		No		English	Woman	Canadian, Cree Metis
02/11/2020	2016	Arts, Psych	AMS Clubs, Psych Students Association	No		English	Female/Woman	East Asian
02/13/2020	2018	Mechanical Engineering	Gisau, Design teams	Yes	Indonesia	English, Bahasa, Chinese mandarin	Male	Asian
02/13/2020	2016	Bachelor of Applied Science - Engineering Physics		No		Hebrew, English, French		Middle Eastern
02/13/2020	2009	Master of Community and Regional Planning		No		English	Cis woman	Mixed race - south asian and white
02/13/2020	2015	Environmental Sciences	UBCC350, AMS Council	No		English	Female	White
02/13/2020	2015	Bachelor of Applied Science - Engineering Physics	UBC Sustaining/Engineering (past)	No		English	Female	South American (West Indian)
02/13/2020	2020	Master of Engineering Leadership - High-Performance Buildings		Yes	Indonesia	Indonesia, English	Female	Asian
02/13/2020	2018	Bachelor of Music		Yes	United States	English	Male	White
02/13/2020	2019	Master of Community and Regional Planning		No		English	Female	Metis (Indigenous and caucasian)

## Appendix D - Coding Plan

### Coding Plan:

The following main themes identified in our focus group design inform the development of our coding plan:

- Dimensions of sustainability
  - Environment
  - Social
  - Economic
- Social infrastructure
- Physical infrastructure
- Programming

Preliminary Coding List:

#### *Sustainability on Campus*

Question	Potential Codes
<p><i>S1. Are you aware of any sustainability-related initiatives on campus? How did you hear about them?</i></p>	<ul style="list-style-type: none"> <li>● Sustainability-related initiatives                             <ul style="list-style-type: none"> <li>○ Student-lead initiatives</li> <li>○ Administration-lead initiatives</li> <li>○ Research projects</li> </ul> </li> <li>● Sources of information                             <ul style="list-style-type: none"> <li>○ Newsletters</li> <li>○ Social media</li> <li>○ Word of mouth</li> </ul> </li> </ul>
<p><i>S2. When you think of the term “sustainability,” what comes to mind? Do you have a personal definition of sustainability? Please explain.</i></p>	<ul style="list-style-type: none"> <li>● Environment                             <ul style="list-style-type: none"> <li>○ Climate change</li> <li>○ Waste management</li> <li>○ Energy efficiency</li> </ul> </li> <li>● Social                             <ul style="list-style-type: none"> <li>○ Social interaction</li> <li>○ Democratic governance</li> <li>○ Equity</li> </ul> </li> <li>● Economic                             <ul style="list-style-type: none"> <li>○ Cost reduction</li> <li>○ Profitability</li> </ul> </li> </ul>

## Interactive Spaces

Question	Potential Codes
<p><i>11. When you think of the term “interactive,” what comes to mind? What features of a space would make it interactive? If any, what spaces on campus do you consider to be interactive?</i></p>	<ul style="list-style-type: none"> <li>● Technology <ul style="list-style-type: none"> <li>○ Sensors</li> <li>○ AV equipment</li> </ul> </li> <li>● Social <ul style="list-style-type: none"> <li>○ Collaboration</li> <li>○ Learning</li> </ul> </li> </ul>
<p><i>12. Which student or community spaces do you use most often on campus? What encourages you to use these spaces? What could be done to improve the spaces you frequently use? What factors contributed to using a space for collaborative work (ie. a group project, meeting, etc.)?</i></p>	<ul style="list-style-type: none"> <li>● Physical infrastructure <ul style="list-style-type: none"> <li>○ Desks</li> <li>○ Chairs</li> <li>○ Outlets</li> <li>○ Technology</li> <li>○ Enclosed</li> <li>○ Open</li> </ul> </li> <li>● Social infrastructure <ul style="list-style-type: none"> <li>○ Inviting</li> <li>○ Presence of people</li> <li>○ Collaboration</li> <li>○ Flexibility</li> </ul> </li> </ul>
<p><i>13. Are there gaps in sustainability spaces or initiatives that the ISC could fill? What kind of information would you be most excited to see in an Interactive Sustainability Centre?</i></p>	<ul style="list-style-type: none"> <li>● Sustainability related-programming <ul style="list-style-type: none"> <li>○ Volunteer opportunities</li> <li>○ Paid opportunities</li> </ul> </li> <li>● Centralization of initiatives</li> <li>● Meeting spaces</li> </ul>
<p><i>14. In imagining an Interactive Sustainability Centre, what would you like the outcomes for the greater campus community to be? Should the focus of the centre be campus, regional, or global?</i></p>	<ul style="list-style-type: none"> <li>● Social <ul style="list-style-type: none"> <li>○ Innovation</li> <li>○ Creativity</li> <li>○ Community</li> <li>○ Collaboration</li> <li>○ Communication</li> </ul> </li> <li>● Environment <ul style="list-style-type: none"> <li>○ Climate change</li> <li>○ Waste reduction</li> <li>○ Energy efficiency</li> </ul> </li> </ul>

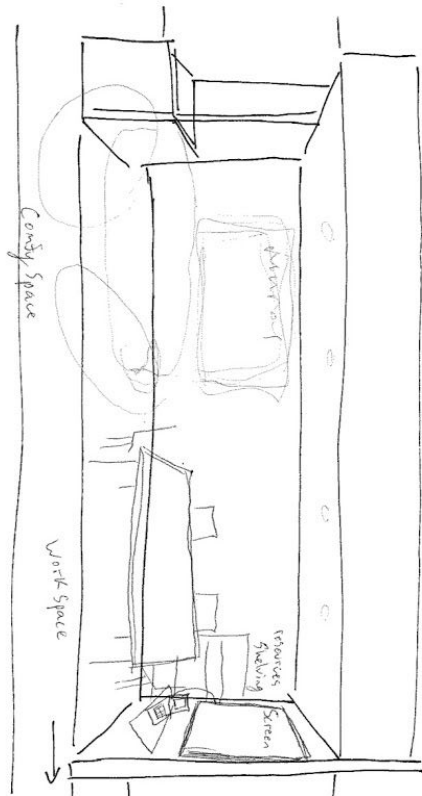
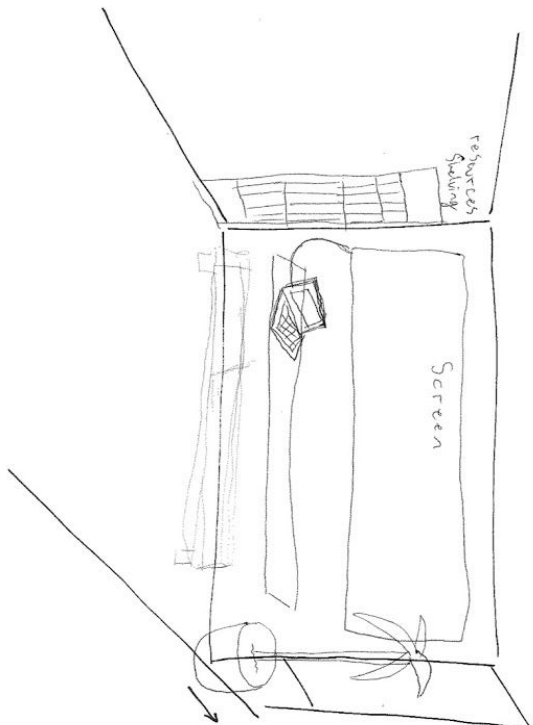
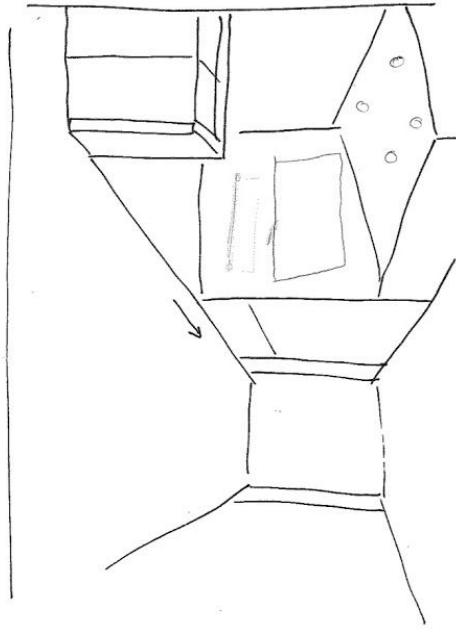
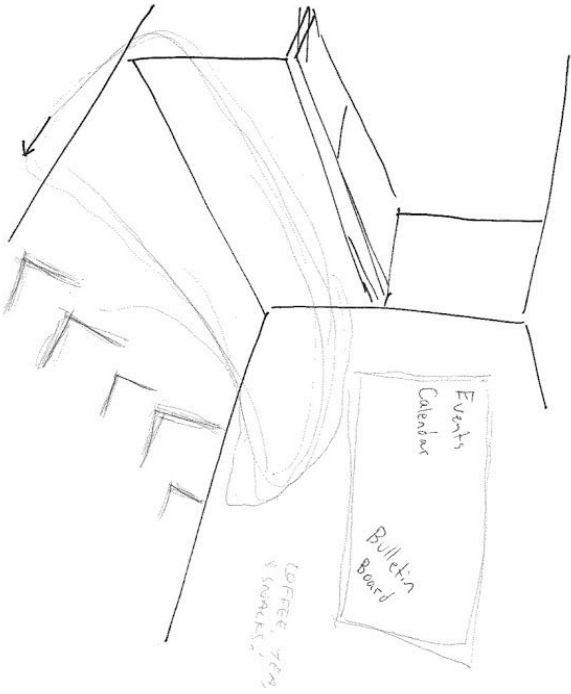
Visual-Spatial Activity

Question	Potential Codes
<p><i>A1. Thinking about your responses to the previous questions, how would you design this space to be an interactive sustainability space? How do you envision yourself using this space? What sort of sustainability-related programming would be offered in the space? Take some time to brainstorm and express your ideas on paper. Be creative!</i></p>	<ul style="list-style-type: none"> <li>● Physical infrastructure               <ul style="list-style-type: none"> <li>○ Desks</li> <li>○ Chairs</li> <li>○ Outlets</li> <li>○ Technology</li> <li>○ Enclosed</li> <li>○ Open</li> </ul> </li> <li>● Social infrastructure               <ul style="list-style-type: none"> <li>○ Inviting</li> <li>○ Presence of people</li> <li>○ Collaboration</li> <li>○ Flexibility</li> </ul> </li> <li>● Programming               <ul style="list-style-type: none"> <li>○ Workshops</li> <li>○ Discussion</li> <li>○ Presentations</li> </ul> </li> </ul>
<p><i>A2. Thinking specifically about rendering [A/B/C], what are the strengths of this space? What are the weaknesses? Thinking about the interactive sustainability space that you just designed, what is one thing you would you incorporate into these renderings?</i></p>	<ul style="list-style-type: none"> <li>● Strengths               <ul style="list-style-type: none"> <li>○ Comfortable</li> <li>○ Visually appealing</li> <li>○ Enclosed</li> <li>○ Open</li> </ul> </li> <li>● Weakness               <ul style="list-style-type: none"> <li>○ Too small</li> <li>○ Limited workspace</li> <li>○ Visually unappealing</li> <li>○ Too enclosed</li> <li>○ Too open</li> </ul> </li> </ul>
<p><i>A3. Which of these renderings do you think is best for collaborative work?</i></p>	<ul style="list-style-type: none"> <li>● Quality of the space               <ul style="list-style-type: none"> <li>○ Open</li> <li>○ Loud</li> </ul> </li> <li>● Physical infrastructure               <ul style="list-style-type: none"> <li>○ Seating</li> <li>○ Technical equipment</li> </ul> </li> </ul>
<p><i>A4. Which of these renderings do you think is best for individual work?</i></p>	<ul style="list-style-type: none"> <li>● Quality of the space               <ul style="list-style-type: none"> <li>○ Quiet</li> <li>○ Secluded</li> </ul> </li> <li>● Physical Infrastructure               <ul style="list-style-type: none"> <li>○ Desks</li> <li>○ Outlets</li> </ul> </li> </ul>

<p><i>A5. What kind of uses can you imagine for the spaces shown in these renderings?</i></p>	<ul style="list-style-type: none"><li>● Programming<ul style="list-style-type: none"><li>○ Workshops</li><li>○ Discussion</li><li>○ Presentations</li><li>○ Information dissemination</li></ul></li><li>● Social<ul style="list-style-type: none"><li>○ Gathering</li><li>○ Collaboration</li></ul></li></ul>
<p><i>A6. For the renderings that you prefer, what feelings or emotions do they generate in you? Why?</i></p>	<ul style="list-style-type: none"><li>● Positive emotions<ul style="list-style-type: none"><li>○ Inspiration</li><li>○ Satisfaction</li><li>○ Motivation</li><li>○ Safety</li><li>○ Happiness</li></ul></li><li>● Negative emotions<ul style="list-style-type: none"><li>○ Anger</li><li>○ Sadness</li><li>○ Discomfort</li></ul></li></ul>

Appendix E - Participatory drawing exercise data

Focus group 1 - drawing 1



Focus group 2 - drawing 1

