**Post-Occupancy Evaluation:
Second Floor Circulation and Lounges**

Austin Lui, Jessica Lee, Stuart Hamre

University of British Columbia

PLAN 522

March 10, 2017

AMS Nest Animation Project

Post-Occupancy Evaluation:
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Final Report

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A collaborative effort between:
University of British Columbia (UBC)
UBC Alma Mater Society
School of Community and Regional Planning (SCARP)

This study was conducted in cooperation with the UBC Student Engagement
and Educational Development for Sustainability (SEEDS) Program.

Report prepared by:

Austin Lui
Jessica Lee
Stuart Hamre

Executive Summary

This report is designed to provide recommendations to the AMS Nest Animation Project team at the University of British Columbia (UBC) in order to improve the social animation of the second floor circulation and lounge spaces.

Over the course of PLAN522: Qualitative Data Collection and Analysis, students at UBC's School of Community and Regional Planning (SCARP) conducted in-person interviews, impromptu focus groups, movement tracking, and photography of 2nd floor circulation and lounge spaces in order to ascertain how students were using the space, their feelings about the space, and what could be improved. Overall, it was found that minor to moderate improvements, primarily to furniture and space maintenance on the second floor, could significantly increase students' overall comfort and enjoyment of the second floor circulation and lounge spaces.

The recommendations herein form one of eight final reports for the AMS Nest Animation Project. Recommendations are specific to 2nd floor circulation and lounge spaces.

Table of Contents

1. Introduction to the AMS Nest Animation Project

1.1. Context

The UBC AMS Nest was designed to be a student-centric hub of activity at the heart of UBC's Vancouver campus. With a focus on the needs and desires of all students, the Nest aims to create a welcoming space for students to eat, shop, study, and socialize. The Nest has been in operation since 2015 following sustainability goals and is currently in the process of becoming LEED Platinum certified.

The Student Engagement and Educational Development for Sustainability (SEEDS) program "advances campus sustainability by creating partnerships between students, operational staff, and faculty on innovative and impactful research projects." AMS has used SEEDS to engage the SCARP community to make recommendations for the Nest Animation Project with the goal of animating the space and bringing life back to this central hub.

1.2. Aims and Objectives of the AMS Nest Animation Project

Since its inception, the Nest has failed to provide the vibrant, student-centric space that AMS had intended. As a result of the lack of student engagement with the space, the SEEDS project was initiated in support of UBC's 20-year Sustainability Strategy to bring life back to the AMS Nest and make it a more popular space on campus. This research will address circulation and lounge spaces on the second floor of the Nest.

Our goal is to better understand how space is being used on the second floor of the Nest, and recommend interventions that will increase animation in the space.

1.3. Central Research Questions for 2nd Floor Circulation and Lounge Spaces

How can the AMS reanimate the second floor circulation and lounge areas in order to contribute to the overall vibrancy objectives of the Nest?

Through answering this main research question, this study will also explore the following secondary research questions:

- How are spaces on the second floor currently being used?
- What are the most and least active areas on the second floor and what are their respective physical characteristics?
- How do Nest users perceive how spaces on the second floor are being used and how spaces can be improved?
- What physical interventions would increase vibrancy and animation on the second floor?

1.4. 2nd Floor Building Plan

N

Stairs

Great Hall

Stairs

2504

2506

2508

2528

2521

2514

2515

Stairs

2314

2311

2309

2306

2301

Quiet Lounge

To Level 1

Performance Theatre

Study Counter

Southwest Lounge

Northwest Lounge

To Level 1

Hatch Gallery

Climbing Wall

E-Sports Lounge

2131

Northeast Lounge
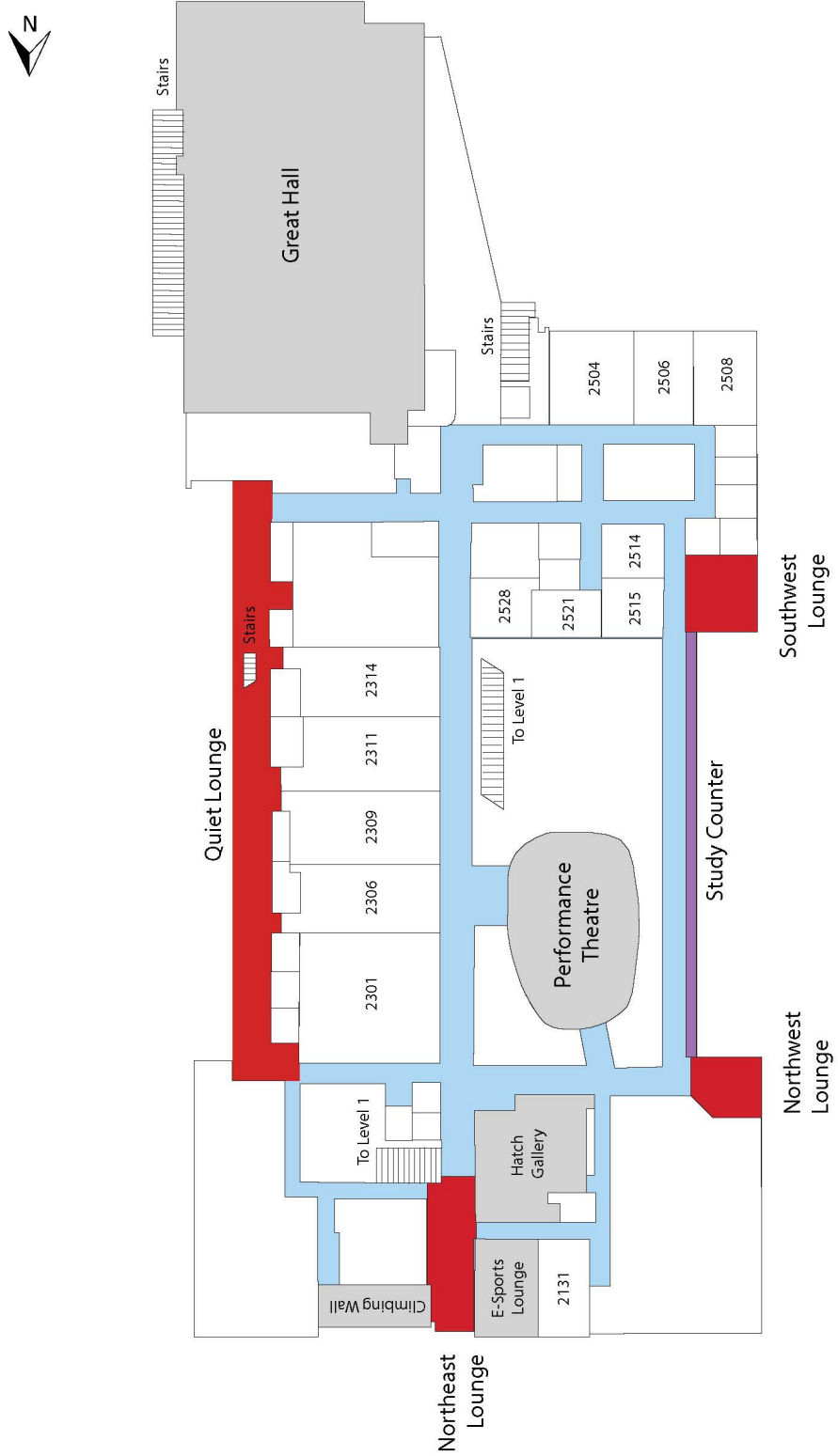
2. Literature and Document Review

The following is a Literature Review of documents that pertain to the Nest Animation Project, with an emphasis on relevant insights to the second floor circulation and lounge spaces.

Type of Literature Review: Critical Analytical and Document Review

Key Terms: Post-Occupancy Evaluation (POE), Student Wellness, Animation, Qualitative Analysis, School, Higher Education, Functional

2.1. Post-Occupancy Evaluation: A Theoretical Framework

Post-occupancy evaluation (POE) is the process of examining the performance of a building after it has been built and occupied. Zimmerman et al. (2001) highlight the importance of POE in evaluating the effectiveness of occupied design environments for its intended human users. Following this statement, the authors identify the importance of feedback systems to improve the design process and ameliorate client satisfaction and "functional fit" with a specific space (Zimmerman et al., 2001, p. 168). This will be the primary approach behind the Nest Animation Project. With great relevance to the AMS Nest Animation Project, Hassanain et al. (2015) research the applicability of POE for school facilities. They highlight the importance of school facilities to provide the physical and social environments to enable student and teacher interaction on a daily basis. Hassanain et al. (2015) execute the POE process by highlighting the performance requirements of school facilities, conducting a walk-through evaluation, holding focus group discussions, administering a user satisfaction survey, and finally, analyzing the data to develop a plan of remedial actions. Another study by Hassanain et al. (2016) describes their findings of a university cafeteria in Saudi Arabia. This study used both a technical evaluation of the building's physical performance and qualitative methods (survey and focus group) to evaluate the building's societal performance.

Research findings indicate that the school environment greatly influencea teaching and learning processes (Hassanain et al., 2015). Other studies reveal that well designed and properly furnished school facilities provide for better academic development. In using POE as a tool to ascertain the fulfilment of the users' requirements, Hassanain et al. (2015) draw on past literature to identify several technical performance requirements pertaining to the conditions of the designed built environment: thermal comfort, visual comfort, acoustical comfort, indoor air quality, and fire protection. In another study, Hassanain et al. (2016) performed technical and qualitative studies using focus groups to evaluate the success of the functionality of a school cafeteria. This study used the same technical performance requirements as outlined in the 2015 study to both evaluate the technical building performance and guide the questions for the focus group.

Multiple POE methods are discussed in reviewed literature. Scott-Weber et al. (2013) use active Learning Post-Occupancy Evaluation to study student engagement and wellbeing in three different

departments of a post-secondary institution. The study concluded that there were statistically significant improvements in student engagement between the old classroom design and the new classroom design. The Nest Animation Project Final Report will provide design insights that are hoped to have similar success as those noted in Scott-Weber et al. (2013).

2.2. Relevance to the AMS Nest Animation Project

POE is crucial to an organization's bottom line and should be emphasized across industries, according to a variety of sources. Riley et al. (2012) indicate that POE began in the healthcare industry and has since been applied across industries and building types, and higher education facilities have significant POE information to choose from in performing their own POE (p. 210). Although POE is argued to be vital to any successful building operation, many companies fail to recognize its merits. Zimmerman et al. (2001) explain main barriers to adopting POE in many companies. Often, designers and planners without an education in POE tend to neglect the concept of continual improvement in design, thus, lack funding for research and development once the building is occupied. Key to the Nest Animation Project is the recognition from the design team that the space can be improved.

The benefits of POE are detailed by all authors. Particularly relevant to the AMS, and as detailed in Riley et al. (2012), is that POE can support the positive ongoing financial management of buildings and benefit staff and occupant well-being (p. 203). "Even minor positive building-related impacts on occupants' satisfaction could possibly result in high economic benefits," suggest Candido et al. (2014), revealing the importance of POE for the AMS, particularly as it hopes to increase revenue from AMS-run food outlets (p. 214). Improvement insights do not come only from building occupants, however, as information provided by users is inherently subjective (Candido et al., 2014, p. 214). Other students may also hold valuable insight for the Nest Animation Project.

2.3. Research Gaps to be Filled

As a whole, research provides thorough insight into POE for the purposes of the Nest Animation Project. Gaps in individual pieces of literature are generally due to either a lack of case studies or too broad a focus. For example, Zimmerman et al. (2001) only assess POE for 'standard buildings' and neglect to discuss cases of special building types. It is unclear what constitutes a 'standard building.' Thus, as they discuss how POE should examine the "effectiveness for human users," they do not provide insight into the different human users that occupy different spaces. Furthermore, Zimmerman et al. (2001) do not direct the reader to any existing studies that have proven the numerous benefits of POE. Riley et al. (2012) purport to focus on educational facilities but provide few industry-specific insights, suggesting that educational facility POE may be lacking in general. In addition, research by Riley et al. (2012) focuses heavily on building staff, rather than other occupants such as student users that would be relevant to the Nest Animation Project.

Other articles provided detailed information about a specific product or too specific a POE method or category without providing sufficient relevant context. The BOSSA article at its core, for example, is

intended to market the organization's web-based survey tool for evaluating occupant satisfaction. Candido et al. (2014) provide some valuable general insight on the benefits of POE, but without access to the BOSSA system, value gained from the article is light. In addition, Candido et al. (2014) focus heavily on quantitative data that is largely outside the scope of the AMS Animation Project. However, even without having access to the proprietary system, there are indications on how AMS may conduct the online survey portion of the Nest Animation Project. Despite the relevance of Hassanain et al. (2015) in preliminary research for the AMS Nest Animation Project, their POE was applied to a high school, and most of their highlighted references relate to primary or secondary school facilities. Additionally, their POE analysis was based on quantitative data rather than qualitative due to the design of the user satisfaction survey. The Hassanain et al. (2016) study uses many of the same methodologies as will be used in the AMS Nest Animation Project. However, we will not be performing any technical inspections of the building performance. Due to its technical focus, the study lacks any understanding of how students feel about the space. Scott-Weber et al. (2013) provided little context and background on the case study reviewed in their article: the article did not describe the particular interventions or the context of old/pre-renovation classrooms and the new/post- renovation classrooms. The paper used twelve factors to analyze the success of the new design but categories (used directly in the survey) were biased towards the values embedded in the new design.

2.4. Schematic Design Program: Gaps Between Planned and Built

The AMS released a SUB Renewal functional program report in October 2009 before the design and construction of the Nest. This report, prepared by the AMS and Cornerstone Planning Group, includes a description of the background context, the renewal of the AMS Student Union Building, the overall intentions of the space, and the specific functional requirements.

The most relevant section for the circulation and lounge spaces on the second floor is in Section 12.0 SUB Common Domain Space. This section discusses the requirements and intentions for all circulation spaces and spaces "not… fully enclosed by walls." It specifies the requirements for the concourse, circulation spaces, and open lounges. The research group will be able to better understand the original intentions of the space, and the framework in which the designers and architects were thinking.

We have also retained other documents specific to the AMS that were used for background information, research, and visualizations.

Sources

Candido, C., Kim, J., de Dear, R., and Leena T. (2014). BOSSA: A Multidimensional
        Post-Occupancy Evaluation Tool. *Building Research & Information*, 44 (2), pp. 214-228.
Hassanain, M. A. & A. Iftikhar. (2015). Framework model for post-occupancy evaluation of school
        facilities. *Structural Survey*, 33 (4), pp. 322-336.

Hassanain, M. A., Mathar, H., & Aker, A. (2016) Post-occupancy evaluation of a university student
cafeteria. *Architectural Engineering and Design Management*, 12(1), pp. 67-77.

Riley, M., Kokkarinen, N., & M. Pitt. (2012). Assessing Post Occupancy Evaluation in Higher
Education Facilities. *Journal of Facilities Management*, 8 (3), pp. 202-213.

Scott-Webber, L., Strickland, A., & Kapitula, L.R. (2013) Built Environments Impact Behaviour: Results of
an Active Learning Post-Occupancy Evaluation. *Planning for Higher Education Journal*, 42 (1),
pp. 28-39.

Zimmerman, A. & M. Martin (2001). Post-occupancy evaluation: benefits and barriers. *Building Research
& Information*, 29 (2), pp. 168-174.

Cornerstone Planning Group. (2009). SUB Renewal Project: Schematic Design Program. *Alma Mater
Society.* pp. 97-103.

Infrastructure Development. (2013). AMS Student Nest: Second Floor Keyplan. *University of British
Columbia.*

AMS. (2014). Council Chambers Meeting Minutes, July 23, 2014. *Alma Mater Society.* pp. 3.

3. Methodology

3.1. Goal of Data Analysis

How can the AMS reanimate or improve the second floor circulation and lounge areas in order to contribute to the overall vibrancy objectives of the Nest?

In order to answer the main research question above, a post-occupancy evaluation (POE) was conducted to examine the current performance of the AMS Nest. As mentioned in the *Literature Review*, POE has been successful in examining the effectiveness of occupied design environments for its intended human users, promoting feedback systems to improve the design processes and ameliorate client satisfaction within a specific space (Zimmerman et al., 2001). Therefore, the concluding recommendations for how to re-animate the second floor, if necessary, will focus on the opinions and activities of current students, faculty, facility staff and general visitors.

Focusing on active users of the second floor lounges and circulation spaces, the performance of the building will be reviewed through a mixed method research (MMR) approach. This approach to research integrates both quantitative data (e.g. surveys) and qualitative data (e.g. interviews) gathering methods. 'Lounges and circulation spaces' refer to the Northeast, Northwest, Southwest, and Quiet Lounges as well as the Study Counter and hallway areas. In this study, data came from two sources: verbal-textual and visual-spatial. Work plans for each of these data sources will be discussed later in this section.

3.1.1. Purpose of Verbal-Textual Data

Verbal-textual data from individual and focus group interviews captures the specific opinions and concerns of current Nest users that engage in different activities throughout the day. Because users utilize the space differently, verbal-textual data will help the study by incorporating the various needs, values, and desires of users. More specifically, the purpose of the verbal-textual data will help this study answer the following secondary research questions mentioned on page 3:

- *How are spaces on the second floor currently being used?*
- *What are the most and least active areas on the second floor and what are their respective physical characteristics?*
- *How do Nest users perceive how spaces on the second floor are being used and how spaces can be improved?*
- *What physical interventions would increase vibrancy and animation on the second floor?*

Individual interviews are useful in obtaining detailed information about users' personal feelings, perceptions, and opinions about the second floor. Furthermore, individual interviews allow

researchers to ask more detailed questions and achieve a higher response rate relative to online, paper, and telephone surveys.

Focus group interviews, similar to individual interviews, are valuable in understanding personal and group feelings, perceptions, and opinions. Additionally, group discussions effectively inspire creative thought and solutions to the questions being asked in an interview. Individuals within a group are more likely to generate ideas and process thoughts when expanding on the ideas of others.

3.1.2. Purpose of Visual-Spatial Data

The purpose of visual-spatial data is to make sense of and validate the interviews as well as gain insight through personal observations at various times of the day. Depending on the space of interest, the absence of users may render interviews irrelevant in making recommendations for these spaces. While verbal discussions reveal useful information about users' perceptions, opinions and activities, visual observations may tell another story about behaviours and activities that are not shared in interviews. For instance, participants may not have any comments about the circulation of users or movement along hallways. Therefore, this method of data analysis and collection will support the exploration of one of the secondary questions: ***How are spaces on the second floor currently being used?***

Photographs act as evidence of important observations and contribute to the discovery of spatial similarities. For this report, the photographs will strengthen our conclusions and provide visual aids in discussions. Movement patterns of second floor will also be incorporated to discover main corridors of movement and spaces of destinations or transitions.

3.2. Verbal-Textual Data: Work Plan

This work plan provides a brief description of the protocol and method of analysis for verbal-textual data. 'Protocol' refers to the method of data collection and extraction. 'Observational Method' describes how data will be interpreted and represented. It is essential to introduce the preliminary set up of this study in order to fully understand the findings and analysis later discussed in this report.

3.2.1. Protocol

An interview guide is a transcript of interview questions with probes and prompts indicated within it to illicit a reasonable or significant response. The Interview Guide used for this study is included in **Appendix A.** Not only does the guide act as a transcript for the researchers of this study, it was strategically developed to help answer the main research question: ***How can the AMS reanimate or improve the second floor circulation and lounge areas in order to contribute to the overall vibrancy objectives of the Nest?***

Using the previously developed questions from the Interview Guide, individuals on the second floor circulation and lounge spaces were approached if they appear to have spare time or are not engaged in a focused activity. Interviewers would proceed only if the potential interview is willing and comfortable. These participants were given two consent forms to sign, one for their records and one for the interviewers. The interview proceeded with a hook, preamble, and main body questions. Participants were given several opportunities to voice additional concerns outside of the scope of the interview questions. Focus group interviews will follow the same procedure.

Each group member would conduct interviews, with rotations of two members interviewing and one member observing general spatial movements and activities at the same time to be used for our visual-spatial analysis (see s. 3.2.). Following the Interview Guide, two interviewers would allow for an effective interview process whereby one person asks the interview questions while the other could record the conversation and transcribe the answers given by participants. The verbatim transcripts will be later coded and categorized under a hierarchy of themes.

The intent of interviewing users of the second floor circulation and lounge spaces is to obtain insights into how students use the space on a day-to-day basis and suggestions as to how the space can be socially animated, thereby answering the main research question. By conducting impromptu interview in the various lounge spaces and sitting areas, this study will capture the opinions and perceptions of a diversity of users.

3.2.2. Observational Method

Since the responses given by users were mostly qualitative, the adopted data analysis technique needed to consider the irregularity and uniqueness of responses. This study will use the analytical method of thematic networks (Attride-Stirling, 2001). Thematic networks discover the themes salient in textual data at different levels and facilitate the structuring or depiction of these themes. Basic themes are the most simplistic themes that are derived from the textual data. Organizing themes organize these basic themes into clusters of similar issues. At the highest level, global themes encompass the principal metaphors in the data as a whole. These broader themes will help inform the study and better develop thoughtful and creative recommendations for the Nest.

Essentially, this way of analyzing qualitative data follows an inductive, bottom-up content analysis. The coding framework will be based on the research questions and Nest objectives that are stated above and specified in the Group 3 Research Proposal. Code words that have emerged from the data are included in **Table 2**. More specifically, the codes were derived on the basis of **(a) the perception of the second floor spaces**, and **(b) recurrent issues and concerns in the discussions regarding the use of space.** The codes and themes discovered from the verbatim interview transcripts will be discussed in the *Findings and Analysis* section.

3.3. Visual-Spatial Data: Work Plan

This work plan provides a brief description of the protocol and method of analysis for both visual-spatial data. 'Protocol' refers to the method of data collection and extraction. 'Observational Method' describes how data will be interpreted and represented. It is essential to introduce the preliminary set up of this study in order to fully understand the findings and analysis later discussed in this report.

3.3.1. Protocol

For movement tracking/user count for each lounge, spend 15 minutes observing (1) the activities performed by the users of the space, (2) the number of people entering and leaving the space, and (3) the movement of people in and through the space by using a building floor plan and drawing movement patterns in pen. Movement tracking and user counts will be performed at different times of day in order to identify how usage patterns vary at different times. Times will be: morning period (9 AM), lunch hour (12 PM), and afternoon (3 PM).

Photography for each lounge and for circulation areas will involve photographs taken prior to, during, and after commencing observation if notable situations are observed. Additional photographs will be taken when pertinent during normal Nest operating times.

3.3.2. Observational Method

Observations will be conducted through a complete observer method whereby the researcher observes but does not participate. For consistency, the study will analyze the visual-spatial data using the same organizing and global themes that emerge from the verbal-textual data analysis (see s.3.2.2).

Sources

Attride-Stirling, J. (2001). Thematic networks: an analytical tool for qualitative research. *Qualitative Research*, 1 (3), pp. 385-405.

4. Findings and Analysis

Five individual interviews and one focus group interview was conducted over the course of the research process. Due to the prominent activities that occupy the circulation sitting areas and lounge spaces, the research group found that spatial observations offered more insight into the activities and behaviours of users. Therefore, while interviews are important for mixed-method research approaches, visual-spatial observations held a heavier weight on final recommendations.

Using an inductive content analysis approach for the qualitative and quantitative data, there are five key (organizing) themes that are present from the verbal-textual data: (1) emotions and perceptions of space by the users, (2) design of physical structures, (3) atmosphere and environment, (4) accessibility, and (5) the functionality of second floor spaces. Visual-spatial data presents the same five themes with the exception of (1) emotions and perceptions of space by the users. These organizing themes contribute to a single global theme: *the second floor lounge and circulation areas have the potential to be socially re-animated.* **Table 1** provides a brief description about the scope of the organizing themes that have been developed from basic themes and codes that will be later discussed.

Table 1. Description of Key Themes

Themes	Description
Emotions and Perceptions	Feelings or emotions that evolve from engaging with the space.
Aesthetic	Aesthetic building performance such as architectural elements, decorations, and design of furniture.
Atmosphere	Technical building performance such as noise, lighting, and temperature.
Accessibility	Physical or social factors that restrict or facilitate use of spaces or movement.
Functionality	Use of physical spaces and the use of appliances or furniture that are present within spaces.

4.1. Findings from Interviews

To reiterate, the intent of interviewing users of the second floor circulation and lounge spaces is to obtain insights into how students use the space on a day-to-day basis and suggestions as to how the space can be socially animated. **Table 2** presents a structured matrix of the textual data obtained from the five individual interviews and the focus group interview (the master transcript is included in **Appendix B)** conducted on the second floor of the Nest. Following the analytical method of thematic networks, the verbatim interview transcripts are broken down into codes, basic themes, organizing themes, and global themes.

Table 2. Structured Thematic Analysis Results Table of Verbal-Textual Data

Global Theme	Organizing Theme	Basic Themes	Issue of Concern	Code
Second floor lounges and circulation areas have the potential to be socially re-animated	Emotions and Perceptions	- Main hallways spaces are perceived as worthless and under-used; only a transition space - Lounge spaces are comfortable	Worthless, transition space, empty Nice, great, good space	Hallways Lounges
	Aesthetics	- Quiet Lounge has the most vibrant design - Design of lounge areas accommodate interaction but not movement or diverse activities - There is plenty of sitting areas but not enough desks	- Positive interior design of Quiet Lounge - Too tight and crowded in lounges (sofa chairs and coffee tables) - Restrictive use of lounge furniture - U-shape layout allows interaction - Optimized amount of sitting spaces - Not enough	Wooden beams Furniture Layout Seating Desks
	Atmosphere	- Lounge areas are quiet	- Lounge areas are protected from noise - Meal times are loud and create large lines	Quiet Busy Loud

		- Second floor areas are loud during busy times of day		
	Accessibility	- Easy horizontal movement through hallways but not in the lounge spaces - Vertical movement is restricted	Overcompensates Difficult to access upper levels spaces Lounge spaces or isolated Temporary furniture does not allow for easy movement	Circulation Vertical navigation Not accessible Restrictive
	Functionality	- Second floor is a popular place to spend class breaks (short amounts of time) - Second floor is a popular place to eat lunch - Desk spaces are heavily used for silent study - Lounge areas enable more informal activities	Lunch time class breaks, and the use of the microwave Desk areas and lounge areas are used for work Lounge spaces facilitate social activity People mostly keep to themselves where there are desks	Eating Studying Interaction Isolation

4.1.1 Analysis: Discussion of Results Table

During the time periods of interviews, the Study Counter spaces along the hallways were always filled with users who were primarily studying. Lounge spaces during this time, while not as populated with users as the desk spaces, were generally filled with users engaged in a mix of activities such as eating, studying, and socializing in groups. From the interview process, users of the lounge spaces were the most approachable while users of the Study Counter spaces mostly kept to themselves and denied interview requests. The nature of uses of the spaces may have affected the users' willingness to participate or converse for an extended periods of time.

Interviewees engaged with the second floor spaces in various ways. Some participants regularly visited the spaces for social interaction with groups of peoples while others come to the second floor less frequently and only for clubs or programming activities such as the Hatch Gallery or the yoga classes. From the interviews it is clear that almost all interviewees spend less than two hours at a time

on the second floor, indicating that this is not a space that many people enjoy spending time in. Excluding one participant, all participants stated that they prefer spending their time elsewhere for the activities they were engaged in at the time of the interview. Libraries on UBC campus were the preferred place to study.

The functionality of furniture and space was one of the most prominent and important themes in this study. It seems that interviewed users are indifferent about possible improvements to all other key themes. From the interviews, participants were most interested in the possibility of replacing furniture to allow more comfort and enhance the use of specific furniture.

Overall, interviewed Nest users had few opinions and independent insights to share about the Nest spaces. 'Independent' refers to the fact that interviewers relied heavily on the prompts and probes provided in the Interview Guide (see **Appendix A**) as most participants provided one or two word answers that were inadequate for the purposes of our study. As a result of limited response and a lack of thought provided by the interviewed participants, the interviews were found to provide less insight than the spatial and participant observations that will be discussed in the next section.

Emotions and Perceptions

Generally, participants had mostly moderate to negative perceptions of the second floor hallways. Participants considered the second floor hallways as "empty" and only "transition spaces." Another participant felt that the hallways are "worthless" and do not create a sense of place or feeling that other spaces would create. This can be attributed to the lack of decorations along the hallway walls that separate the second floor from the others. In contrast, there were mostly positive perceptions of the lounge spaces throughout the second floor. They are "great, good spaces" for groups to interact and socialize, partly due to the atmosphere and arrangement of furniture that enable a more unstructured environment. The Quiet Lounge held the most positive views in the same respect as well as the aesthetic features that make this space unique.

Aesthetics

There were few comments about the architectural features of the building structure or the appearance of the furniture on the second floor. However, a few respondents did admire the wood beams of the Quiet Lounge areas. Comments from interviewers suggest that the Quiet Lounge areas are the most vibrant in furniture design and colour which set this space apart from the remaining lounge spaces on the floor. Other lounge spaces along the main hallways had the same furniture and decorations that do not promote a strong impression on the users.

Atmosphere

For the second floor, comments about the atmosphere on the second floor lounge and circulation spaces referred to the noise levels. During meal times, several interviewees commented on the rapid

increase of noise especially due to the increase in activity on the first floor. The second floor is a common place to spend class breaks and eat lunch, therefore it is not surprising that many of the food outlet customers travel upstairs to the next level to sit and enjoy a meal. As noted, many of our interviewees used the second floor spaces for the same reason. Only the Quiet Lounge spaces of the second floor are consistently quiet throughout different times of the day. Not only does the design provide a calming environment, but the Quiet Lounge spaces of the Nest are shared by all floors and are protected from the noise of the central areas of activity.

Participants who were studying expressed their preference of the libraries on the university campus as it is more quiet.

Accessibility

Although difficult for participants to answer, there were a few comments about the accessibility issues of the Nest in comparison to the Old Student Union Building (SUB). The old SUB was "more intimate" due to its smaller hallways that resulted in a crowded environment which facilitated social interaction. With the idea of a lack of circulation in the old SUB, the Nest can be seen to "emphasize [and] overcompensate with circulation." As a result of too much unnecessary circulation space, "there's a lot of empty, unusable space" along the hallways. Interpreted another way, the Nest does not facilitate an "intimate" transition full of social interaction.

Note: *While beyond the scope of this study, one participant commented how the Nest is "hard to navigate vertically."*

Functionality

The second floor spaces function as a "good place to be in between classes," eat lunch, socialize, and study. Study Counter desk spaces are typically sites of studying and "people are usually on the desks" and "usually by themselves" when they come to the second floor. This means that these spaces are not common places to socialize. Meanwhile, lounge spaces hold a variety of different activities. Few comments were provided that would indicate the need to alter the desk spaces, but instead, several comments requested an increase the number of desks available on the second floor.

The presence of microwaves on the second floor Northeast Lounge attracts many users to the second floor to eat home-made meals, but the number of microwaves has decreased creating large waiting lines to use this appliance during meal times.

Studying is also a popular activity within the lounges, but the furniture acts a barrier to engaging in this kind of activity. The low-height tables provided within each lounge space are too low to the ground to function as desks. Additionally, the lack of electrical outlets in the lounges prevent users from staying in these spaces for extended periods of time. Furthermore, the typical couches in the lounges are not comfortable, and "more cozy cushions" would be desired for longer visits.

The layout of furniture was mentioned several times in the interviews. One interviewed user of the Southwest Lounge commented that the "U-shape of the furniture is conducive to good interaction" and this layout should be adopted in other lounges. In the lounges without this U-shape arrangement, such as the Northeast and Northwest Lounges, the placement of furniture within small lounge spaces are "too tight," making the lounges less accessible and hard to navigate especially when there are several people using the space.

4.1.2. Limitations to Interviews

Interviews were conducted throughout different times of the day in order to capture the various users of the second floor spaces. Nevertheless, all users interviewed were undergraduate students. Therefore, the study may not be complete as the opinions of graduate students, faculty members, and facility employees have not been taken into account.

Another limitation to the interviews and focus groups centred on the inability to question users of the Study Counter spaces. As mentioned previously, desk space users typically kept to themselves and were not willing to participate in the study, resulting in all interviews being conducted for users of the lounge spaces.

Finally, a limitation to this study lies within the ability to illicit full responses with deep thought. Interviews were impromptu and constrained by time; therefore, many responses given by participants were not fully developed given this time frame. Thus, the most insightful data collection method for this study was through visual-spatial data analysis.

4.2. Findings from Spatial Observations

Spatial observations provide a strong opportunity to observe how users are truly using a space. Often, what interviewees say and what interviewees do can differ. In addition, spatial observation is critical to understanding how students would naturally use a space without interruption. Emphasis was placed on spatial observations over the course of research due to interview respondents' overall disinterest with the second floor circulation and lounge spaces overall. Due to this reality, spatially observing second floor spaces, as well as the activities within these spaces, offered an opportunity to quickly and easily understand what was working, what was not working, and what can be improved. **Table 3** presents a structured matrix of the observational data obtained from studies of the second floor of the Nest.

Table 3. Structured Thematic Analysis Results Table of Visual-Spatial Data

Global Theme	Organizing Theme	Basic Themes	Issue of Concern	Code
Second floor lounges and circulation areas have the potential to be socially re-animated	Aesthetics	- Quiet Lounge has the most vibrant design - Design of lounge areas accommodate interaction but not movement or diverse activities - Lounge design intent is let down by uncomfortable, 'un-loungelike' furniture - There are plenty of seating areas but not enough workspaces suitable to work	- Positive interior design of Quiet Lounge - Too tight and crowded in lounges (sofa chairs and coffee tables) - Restrictive use of lounge furniture - U-shape layout allows interaction - Optimized amount of sitting spaces - Not enough	Wooden beams Furniture Layout Seating Desks
	Atmosphere	- Areas are cluttered - Certain items do not belong in second floor circulation and lounge spaces and take away from overall appeal	- Improper storage of items (e.g. stacks of chairs [images. 3, 4]) detracts from pride of ownership and overall feeling of comfort on second floor	Cluttered Unwelcoming Busy
	Accessibility	- Hallways restricted by storage	- Temporary furniture does not allow for easy movement	Circulation Not accessible Restrictive
	Functionality	- Second floor is a popular place to spend class breaks (short amounts of time) - Desk spaces are heavily used for silent study	- Individual study desks are very popular - Tables do not function well in lounge areas for studying (too low)	Studying Interaction Usability

		- Lounge areas enable more informal activities	- People mostly keep to themselves where there are desks	

4.2.1. Analysis: Discussion of Movement Tracking and Observation Table

Note: *Most recommendations are based on visual-spatial data collected through participant observation, as more was gleaned through photography and floor tours than through interviews and focus groups. This section is therefore shorter, as data was collected more succinctly, directly by the group members, as opposed to being collected from interviewees.*

Students do not spend much time in the second floor circulation and lounge areas. Much of the activity, apart from students moving through the second floor, is concentrated along the Study Counter area which offers desk spaces to study with power outlets and view to the Nest courtyard. This study counter is pleasant and is one of the highlights of the second floor.

After spending significant amounts of time in the second floor circulation and lounge spaces observing movement and tracking users, students' reasons for not remaining for long periods of time in second floor lounge areas is clear: much of the furniture in the lounges are hard and uncomfortable—distinctly 'un-lounge-like'—and appears to have been specified due to its durability and not for comfort. This furniture runs contrary to the purpose of a lounge, which should provide a comfortable space for students to relax. As a result, lounges ended up feeling like and serving as waiting rooms rather than as lounges. This observation was noted on several occasions as students would often spend a brief moment sitting on one of the couches before proceeding to another space in the Nest. This was also observed in numerous lounges at various times of the day during participant observation periods. Though the lounges have been architecturally designed to be quieter and more comfortable using carpeting as opposed to the concrete floors elsewhere on the second floor and dropped acoustical ceiling tiles which dampen the sound, these architectural elements are compromised by furniture that does not suit a lounge setting.

Much of the movement tracking revealed that, as anticipated, the circulation corridors on the second floor were used to pass from one area of the Nest to another. However, the tendency to continue through the lounge spaces rather than stopping indicates that the lounges may be seen as accessories to circulation spaces, and not as destinations unto themselves. Again, this is likely due to the lack of suitable lounge furniture.

Aesthetics

One unique aspect of the AMS Nest is its ability to feel open, with the centre of every floor opening up to the atrium. In respect to social connectivity, this open design increases social connectivity by

allowing people to see others in the atrium and across the entire floor. During our personal observations, our group looked out onto the atrium and made eye contact with other colleagues.

Atmosphere

On respondent commented that most people on the second floor "keep to themselves", especially users of the study desks lining the circulation space (the Study Counter). This is not to say there is no socializing that happens. Many of the club spaces/programming on the second floor create a social connectivity in the circulation spaces, as people from similar communities will be congregating for a specific event. The floor in general is much less chaotic than the atrium, which often has constant programming, club activities, and events.

Accessibility

As one of the respondents mentioned, the pocket lounges not being accessible, specifically the Northeast and Northwest Lounges. During our observations in these lounges, the furniture was arranged in a configuration where the pathway into the lounges were as small as 2 feet wide.

Functionality

The microwave in the Northeast Lounge is used regularly. Other appliances such as the vending machine, water fountains, and a charging station were less frequently used.

The piano in the Northeast Lounge was used occasionally. The piano acted as a social instigator between friends and strangers. Those who ignored the piano did not seem to mind people playing the piano. However, the AMS has restricted the use of piano during certain times of the day for the Climbing Wall's belay training adjacent to the pocket lounge. A sign stated the piano could be a potential distraction for the climbers.

One wall of the Northeast Lounge is a wall-sized sliding door that goes into the Climbing Wall. The intention was to create a viewing wall for people to spectate the climbers. However, the wall seems to be permanently closed, with the lounge furniture blocking the viewing wall.

The AMS has also been storing many of their large supplies in the smaller, less frequented circulation spaces. This made these circulation areas more crowded, less welcome, and less pleasant.

Different areas of the second floor had distinct intentions for noise allowance built into the design. The Southwest pocket lounge, the largest of the 3 pocket lounges is designed with carpeted floors, and sound paneled roofs to mute the noise within the lounge. It is also more secluded from the atrium than the other two pocket lounges, reducing the noise coming from the atrium.

One interviewed participant mentioned they would like to see more "alternative seating" for different uses, such as sleeping, relaxing, standing, etc.

4.2.1.1. Photographs

[1] Foot-operated charging device.
Code: Cluttered; Usability

[2] Fully occupied study seats.
Code: Studying; Busy

[3] Lack of storage throughout second floor.
Code: Cluttered; Unwelcoming; Restrictive

[4] Lack of storage throughout second floor.
Code: Cluttered; Unwelcoming; Restrictive

[5] E-Sports Lounge very well-used.
Code: Usability; Busy

[6] Lounge tables are not appropriate.
Code: Usability; Busy; Studying; Seating

4.2.2. Limitations to Spatial Observations

Spatial observations are inherently limited in that they are biased in favour of the observer's viewpoint. That is, the observer will document what they believe is pertinent to the investigation. Movement tracking can also be difficult as the final destination of those being observed is often unknown, meaning the data is somewhat incomplete.

5. Discussion and Recommendations to Animate the 2nd Floor

The following section provides a list of recommendations based on the key findings, interviews, and observational data discussed in this report. For the sake of this report, we have not restricted ourselves to a budget. Some suggestions will be easier and cheaper to implement than others. It is important to note that each recommendation is mutually exclusively and can be implemented independently. However, some may synergize well with others if implemented together. Although the second floor is a unique space, some of these suggestions may apply to other spaces in the Nest. Lastly, implementation can occur at any scale. We understand that resources may be limited, and some of these recommendations can be altered to reduce cost. These are not prescriptive recommendations, but suggestions to be discussed. We have framed our recommendations to address each theme from our key findings and observation.

Emotions and Perceptions

As mentioned in the key findings, the second floor circulation and pocket lounges lack a sense of place. The location of the Northeast Lounge, in particular, has potential to be much more activated, with its fixed programming adjacent to the lounge (Climbing Wall and E-Sports Lounge). However, too many conflicting uses of this space have shown to be an issue. The use of the piano is distracting for the Climbing Wall users. A sliding wall that connects the Northeast Lounge to the Climbing Wall has been covered by additional seating. The E-Sports lounge is often busy with programming, and many of its users wait outside for their programming to begin, which often spills out into the Northeast Lounge.

Our first recommendations would be to move the piano to another space such as the Great Hall foyer and remove the furniture blocking the sliding wall to the Climbing Wall. The AMS could also allow for flexible programming for the space for the adjacent users. For instance, this lounge could be booked by the Climbing Wall or E-Sports Lounge users as a waiting room, a viewing area or a meeting space.

Second, we recommend installing a digital interactive screen on the wall adjacent to the stairs for the club programming. This will make club activities more visible, and increase a sense of vibrancy in the Nest. It will also help with wayfinding.

> **Summary of recommendations**
> - Tune and move piano to another lounge space (or Great Hall foyer for special events)
> - Remove furniture blocking the sliding wall facing the Climbing Wall
> - Provide opportunities to book pocket lounges for programming
> - Install an interactive digital screen on wall facing main staircase landing

Aesthetics

The design of the building is admirable, and little needs to be done. We found the Quiet Lounge and Performance Theatre design to be particularly unique and impressive. However, the furniture of the pocket lounges could use some design improvements. The tables should be redesigned to be more functional for its current use. Most of the current users are using the lounges for eating, working on their laptops, and socializing. The current height of the tables does not reflect the use of the space. Similarly, the chairs can be replaced with seating that better reflects the use of the space. Some interviewees suggested more diverse types of seating for different uses, similar to the lounge on the 3rd floor.

> **Summary of Recommendations**
> - Replace all tables in pocket lounges to be more functional for users
> - Replace all chairs in pocket lounges to be more functional and comfortable for users
> - Alternatively, furniture can be replaced with a diversity of seating types for various uses

Atmosphere

The most notable design feature of the AMS Nest is the openness of the space. This also means that noise and lighting bleeds from one section of the space to another. Some of the spaces, such as the Quiet Lounge, provides an alternative space separate from the business of the atrium. People seemed to appreciate the diversity of atmospheres on the second floor. However, a consistent temperature was an issue in the Great Hall. Through personal observations, the foyer space was particularly cold. We believe the glass facade is allowing a significant amount of heat out of the building. We understand that through the SEEDs program, a proposal titled *UBC Student Union Building Living Wall Design Proposal*, was made by students in 2010 to install a living wall. We believe this could potentially work well on the glass facade facing the Great Hall. This living wall could act as an insulation to keep the heat during colder times of the year.

> **Summary of Recommendations**
> - Install a living wall on the glass facade facing the Great Hall

Accessibility

This category refers to two types of accessibility: the accessibility of people with all abilities to use and enjoy the space; and the convenience for users to get to the space. Most of the interviewees were on this floor because of its convenience and accessibility (compared to the 3rd and 4th floor). The main yellow staircase, and the open-atrium concept invites users to come to the upper floors.

The physical accessibility of the building is also acceptable, with two elevator access points, and wide enough circulation spaces for anyone to move through comfortably. The building was clearly designed with accessibility in mind. However, added features such as the furniture in the lounges are configured to be inaccessible. The layout of the furniture particularly in the Northeast and Northwest Lounges created bottlenecks points no more than 2 feet wide, rendering the space difficult to walk through for any user, including users with ability issues.

Secondly, the wayfinding of the space can be improved. The placement of the signage is inconsistent and not intuitive for the user. The signs that direct users to particular spaces should be clearer and be repositioned to offer more direct wayfinding. The previous recommendation as to the digital screen at the main staircase will also improve wayfinding.

Summary of Recommendations
- Rearrange the furniture, specifically in the Northeast and Northwest Lounges to have a wider clearance for people of all physical abilities.
- Improve the signage and wayfinding for common destinations to be more accessible

Functionality

Users often come to the second floor for pragmatic reasons. Functionality seems to be the primary concern for most users of this space. Some of the recommendations listed above will already improve the functionality of the space, such as replacing the furniture in the pocket lounges, and moving the piano. The piano will also need to be tuned properly and maintained regularly. The pocket lounges could also be improved by introducing more microwaves to the Northeast Lounge, which currently has one microwave. The Southwest Lounge is currently occupied by a standing bike installation student project (see photographs in s. 4.2.1.1). This installation seems to never be used, and from our observation, does not attract any curiosity. We would recommend replacing this project with something more functional, such as standing computer desks. The Southwest Lounge is primarily used as a waiting area, where users occupy the space for short periods of time. This is why standing desks would be a suitable addition to the space.

The most commonly occupied space during any time of the day are the study counters lining the circulation space. More desks would be useful. We have identified the west wall to be one area that could potentially introduce additional desk spaces.

Summary of Recommendations
- Tune and move piano to another lounge space (or Great Hall foyer for special events)
- Introduce more microwaves in the Northeast Lounge
- Replace bike installation with standing computer desks

- Increase capacity for study counters lining the circulation space on the west wall

6. Concluding Remarks

In summary, our analysis shows that the design of the AMS Nest has been quite successful in meeting its target for creating a vibrant student space for a diversity of uses. At the beginning of this report, we defined social animation as "a welcoming and inclusive atmosphere that facilitates community well-being and social participation amongst the diverse student body."

We used mixed-method research (MMR) as our methodology to help us understand how the space is perceived, how it is used, and how it can be improved. More specifically, we used interviews, focus groups, and visual-spatial observations to conduct our research. Our visual-spatial observations included movement tracking, counting, and general observations of the space.

Based on our analysis and key findings, the circulation and lounge spaces on the second floor are used mostly as a transitional space for students who are generally either studying, eating, socializing, waiting for programming, or any combinations of these uses. The diversity of atmospheres between lounges and study spaces are well used. However, our research shows that people come to the second floor as a convenient space to spend a short amount of time, but do not identify with the space as having a sense of place. We conclude that through small improvements to the space, the second floor can become more welcoming and inclusive for a diverse student body. We believe spaces such as the pocket lounges are underutilized, and have the greatest potential for more social animation.

We organized our key findings and recommendations into 5 categories: emotions and perceptions, aesthetics, atmosphere, accessibility, and functionality. The recommendations address particular themes and improve the spaces to be more socially vibrant and welcoming.

We have no expectation of the AMS Nest of implementing all of the recommendations listed in the report, as we understand this may not be feasible. However, we encourage the AMS to look at this report in context with the other reports prepared by our colleagues to understand some of the common themes of our collective key findings, and what unique assets and challenges each area has.

We would like to thank the AMS for this opportunity for the PLAN522 class to implement what they have learned in the class to a real project. We would also like to thank SEEDS for facilitating this collaboration, and our professors, Penny Gurstein and Nora Angeles for facilitating this rewarding project.

Appendix 1: Interview Guide

Introduction/Preamble

Hook:
Hey! We're asking students about how to improve and animate spaces in the Nest. Do you have a few minutes? We have [incentives, e.g. gift cards] for your participation!

Introduction messaging points:
Our names are [names]. We are graduate students at UBC's planning school contracted by the AMS to conduct a study on making the Nest more welcoming and inclusive. We'd love to ask you a few questions about the 2nd floor.

Please sign our consent waiver. It explains what we're doing, gives our contact information, and ensures that this interview will remain confidential. (*Provide one waiver to interviewee, and retain one with interviewee's signature.)*

Do you mind if we record you? Again, this interview and your answers will be confidential.

Warm-Up Questions
Note: questions denoted with an asterisk (*) are optional depending on the interviewee's responses.

- What brings you to the Nest today?
- How often do you come to the second floor?
    - *How much time do you spend on this floor?
- What do you typically spend your time doing on the second floor?
    Prompt: studying, involvement with clubs, socializing, eating, etc
    - * Why do you like doing [activity] on this floor?
        Prompt: atmosphere, functionality, sense of belonging, seating, etc
- * What do you think about this floor?
    Prompt: likes/dislikes, atmosphere, functionality, sense of belonging, seating, etc.

Main Body Questions

- Are there other places where you like to [activity]?
    Prompt: library, home, coffee shops, etc.
    - * What do you like about those spaces?
    - * Why don't you go to these other places?
- Is there a reason you don't spend more time [studying, hanging out, eating, etc.] here?
    Prompt: lighting, available spaces, atmosphere, noise, people, etc.
- Are there any improvements to the second floor that would like to see?
    Prompt: similar to their other preferred places to [activity]
    Prompt: plants, music, artwork, colour of walls, etc.

Cool-Off Questions

- Do you have any comments or recommendations for the Nest in general?
  Prompt: other floors or spaces in the Nest
- Are you an undergraduate or graduate student, or staff, faculty, etc.?
- Lastly, do you have anything else you'd like to add that we might have missed?

Conclusion

Thank you for your time. We appreciate your participation and feedback. Our findings will be available on the AMS website. If you are interested and have more suggestions later, there will be an online survey available sometime in the next few weeks. Here is your [incentive].

* Follow-up questions if applicable

Appendix 2: Master Transcript

What brings you to the Nest today?
R1: to get food, then study
R2: I want to look over some stuff
R3: Long break between classes
R4: Waiting for meditation club
F1: Break between classes
R5: Volunteering at the Hatch Gallery

How often do you come to the second floor?
R1: this is my first time
R2: every day, usually for a couple hours
R3: A couple of times a week
R4: 3-4 times a week
F1: A couple of times a week
R5: A couple of shifts a week

How much time do you spend on this floor?
R2: N/A
R3: 1-2 hours
R4: 1 hour at noon
F1: An hour
F2: Hatch Gallery is open 12pm to 4pm, Sometimes stay after shifts or between classes

What do you typically spend your time doing on the second floor?
R2: I usually come here to meet friends; this is where they hang out so I come to see them and we all hang out together
R3: Eat, sometimes work, sometime socialize
R4: Meditation during the day and pottery club on weekends.
R4: I also go to the Free Store
F1: Usually just eat lunch and study in the lounge/desk
F1: We come to use the microwave
F2: Yoga studio classes occasionally
F2: Not much else [other than volunteer at the Hatch]
F2: Sometime do work during class breaks

What do you think about this floor?
R1: The main hallway spaces are 'worthless,' but the spaces in this lounge are very nice. I especially like the wooden beams in this back space… but other than that there's not much nice about the second floor.
R2: It's a good space for interacting, but also good for studying quietly like I'm doing now
R2: It's easy to sit down and interact in this lounge. The U-shape of furniture is conducive to good interaction and it would be good to see this layout in other lounges.
F2: Priority is spent on the main level of the nest

F2: People are usually on the desks
R4: I don't spend much time up here
R3: Nice and quiet here (lounge)
F1: People are usually by themselves
R4: Optimized seating at the Nest
R4: Good place to be in between classes

Are there other places where you like to go to study, and do whatever it is you're doing here today?
R1: I usually spend time in the library because I don't have a laptop, so I go there to work on the computers.
R2: nowhere else on campus
R4: N/A
R3: I usually study at the library (Irving)
F2: Irving Library

What do you like about the library?
R1: the computers
F1: It's more quiet
F2: Quiet

Why do you (not) like spending time on this floor?
R1: I haven't had a reason to come here; there are no computers
F2: Not a full-time student so I am not on campus often
F2: Nest is very busy during meal times
F2: Food lines are too long

Comparison to Old SUB?
R3: Old sub was more intimate (smaller hallways)
The Nest emphasizes/overcompensates with circulation
There doesn't need to be that much circulation space
There's a lot of empty unusable space because of this
Old sub was hard to navigate horizontally
New Nest hard to navigate vertically
This is a grandiose version of the SUB
Didn't take the good parts of the old SUB
F2: Better than the old SUB. More space and food outlets

Are there any improvements to the second floor that would like to see?
R1: If there were computers here, I might come here as often as the library. But there would have to be lots of computers. For example, when you go to the library, you can always be guaranteed to get a computer because there are tons of them. If they added 5 or 6 computers to the Nest there probably wouldn't be a good chance at getting one of them. So they would have to have a lot.
R2: no, this floor is great as it is
R3: More desks, Lounges are not accessible, even though the building is, furniture is too tight, Temporary furniture is restrictive.

R4: I wish there were more cozy cushions and "alternative" spaces and seating like the lounge on top of the egg (3rd floor)
F1: more desks
F2: No

Do you have any comments or recommendations for the Nest in general?
R1: I don't usually come here; no comment
R2: No, things are good
R3: Everyone seems to be in transition. People are just in between classes.
R4: I wish there was more affordable and healthy food options.
F1: No
F2: Maybe have printers

Are you an undergraduate or graduate student, or staff, faculty, etc.?
R1: Undergraduate
R2: Undergraduate
R3: Undergraduate
R4: Undergraduate
F1: Undergraduate, undergraduate
F2: Undergraduate, undergraduate

Lastly, do you have anything else you'd like to add that we might have missed?
R1: No, I think we're good!
R2: No, nothing
R3: AMS needs to manage and promote clubs more
R3: AMS has too much power over clubs, too much red tape
R4: N/A
F1: No
F2: No