A Post-Occupancy Evaluation of the Gerald Larkin Building's First and Basement Floors

ENV 461 /1103 Fall 2019

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Table Of Contents

Background:

Our client, Dr. Jonathan Steels, requested that we engage with the Gerald Larkin Building's community to determine how the population uses the spaces and facilities provided. This project serves to provide initial data for the future renovations of the building's first and basement floors along with providing insight for future developments of the space and Trinity Campus. Our research encompasses the community's direct input through a Building Use Study, a supplementary survey and semi-structured interviews around, but not limited to the topics of comfort, productivity and accessibility. Completion of this project gave us immense insight into the daily use that the site supported including eating, waiting, studying and meeting. The research also demonstrated the overall functionality of the Larkin Building and allowed us to visualize possible solutions to support our client's future redevelopment initiatives. Over the course of our research, we have come to understand how the building is pertinent for the users as a multifunctional space that is conveniently located.

Our Site:

The Gerald Larkin Building is a mixed-use campus site for students, faculty and visitors located within the Trinity College campus at the University of Toronto (Figure 1). It is set approximately half a major city block south of Bloor Street West on Devonshire Place and is a convenient central campus hub with its close proximity to Toronto's subway system (St. George Station) and other main urban arteries of commuting such as city bike lanes.

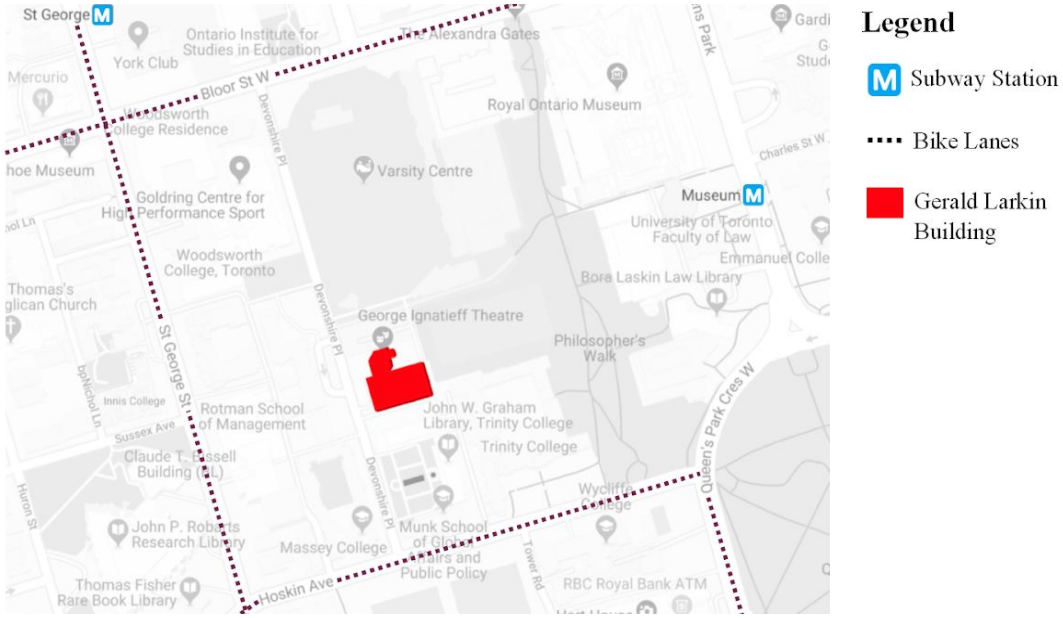


Figure 1- Location of the Gerald Larkin Building

The building is a low-rise structure that was built in 1961 and is attached to the George Ignatieff Theatre. Our client has informed us that the building/theatre is in the process of becoming a designated heritage site. This process of heritage designation is important in our

investigation as this designation limits possible renovations and future developments on the campus. Located inside the building is the "Buttery" which is the name of the first floor common space and servery. This space includes a mixed lounge-seating area that contains a cafeteria servery that is an alternative to Trinity College's residence dining hall and is a convenient space for purchasing meals or bringing one's own food items to microwave and eat.

Topic Area:

Pictures of first floor

We are assessing the performance of the Gerald Larkin Building's basement floor and first floor common space by gathering transient occupants' opinions on these spaces. As such, our topic area is a Post-Occupancy Evaluation (POE) of the basement and first floor of the Larkin Building. A POE is the process of examining buildings in a systematic manner after they have been built and occupied for an extended period of time (Preiser, White & Rabinowitz, 2015). POEs focus on building's occupants and their needs, therefore, it is the occupants of the Larkin Building who have provided insights into the outcome of design decisions previously made in the Larkin Building. The feedback provided through a POE can help document successes and failures in building performance, thereby allowing for immediate problem solving of pressing issues. Furthermore, the information formulated from a POE helps form the basis for creating improved buildings in the future. As such, the results from a POE can be used to justify and guide the construction and remodelling of an existing building. The purpose of conducting the POE for our client is to provide insight into successes and failures of the basement and first floor spaces of the Larkin Building by identifying issues that need immediate attention and aspects of building functionality that are operating well for the users. The basis of the findings will help guide our client in renovating the Larkin spaces under investigation and potentially help with the construction of the new proposed Trinity building.

Project Scope:

Our surveys and interviews were solely directed at transient occupants who were using the common space on the first floor of the Larkin Building. Thus, we would approach the occupants who were sitting in the Buttery space who were engaging in a variety of activities. The reason for why we approached users in this space is threefold:

1. The first floor is a pertinent part of our analysis as it is a key area of interest for our client;
2. The first floor is the most densely occupied area, and therefore, it offered the best opportunity to collect a large amount of surveys and interviews;
3. The basement is rarely occupied by individuals, it has no tables for people to fill in surveys and asking people to complete an interview or survey in the basement adds to the ambiguity of the space and would likely result in low response rates.

Furthermore, the strategy of surveying and interviewing on the first floor is justifiable to get information on the basement because the basement is generally the only place to access washrooms (besides the single accessible washroom on the first floor that few occupants are aware of) and as a result, many occupants are familiar with the basement because when they need to use the washroom, occupants will use the basement. Moreover, because we were surveying and interviewing in the general first floor communal space, there was limited control over who we interviewed and surveyed (students, alumni, staff, etc.). Therefore, our results reflect a broad range of individuals who occupy the space, but they mainly reflect the experiences of undergraduate students.

Objectives:

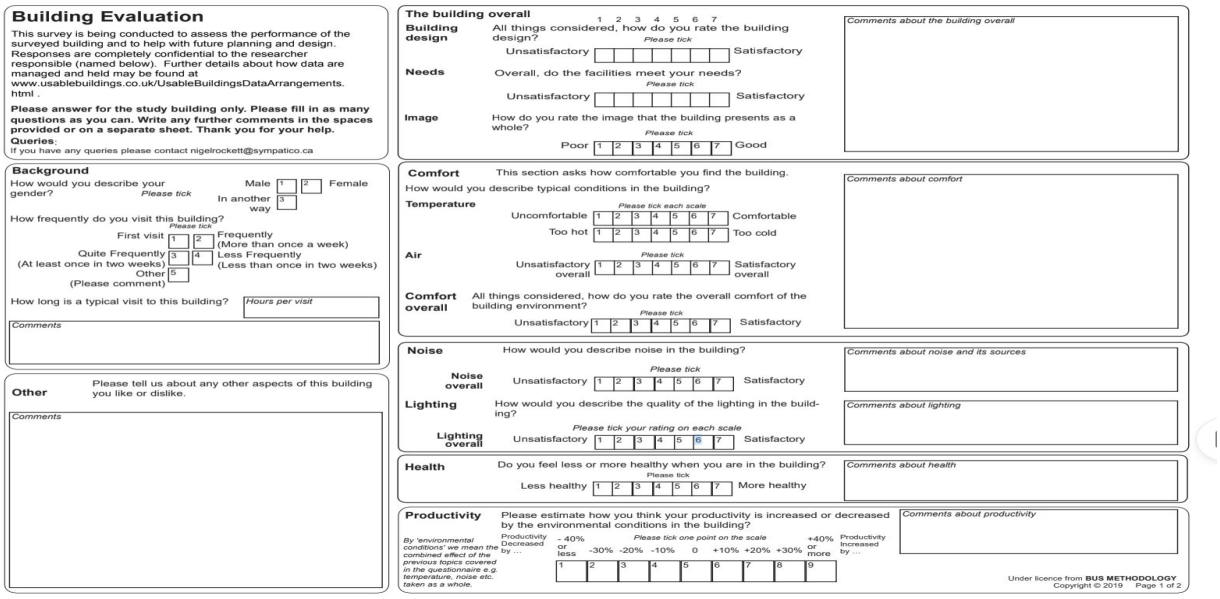
1) To identify what aspects of the first floor and basement floor of the Larkin Building are negatively impacting occupants' experiences and what aspects are positively impacting occupants' experiences.
    - This entails evaluating whether aspects such as comfort, noise, lighting, accessibility, health and productivity are optimal or below average in the spaces being evaluated.
    - Furthermore, this entails gathering information on occupants' needs and finding out whether those needs are being sufficiently met in the building spaces, which includes getting an understanding of whether occupants believe the food services are integral to the space and whether the spaces are accessible. Occupants also speak to enabling experiences and disabling experiences within the spaces through surveys and interviews, which will help us identify the positives and negatives of building use.

2) To explore how the space is being used by the community and to what degree.
    - This objective is to determine how the first floor is being used by the community (i.e studying, eating, group work, socializing). This aspect is to demonstrate the purpose of visits to the site and to understand what activities are occurring more frequently when compared to others.

3) To establish how the first and basement floors of the Larkin Building could be improved.
    - This entails using what occupants do and do not like about the spaces to provide recommendations for renovations that will improve occupants' experiences while using the first and basement floors.

Methodology:

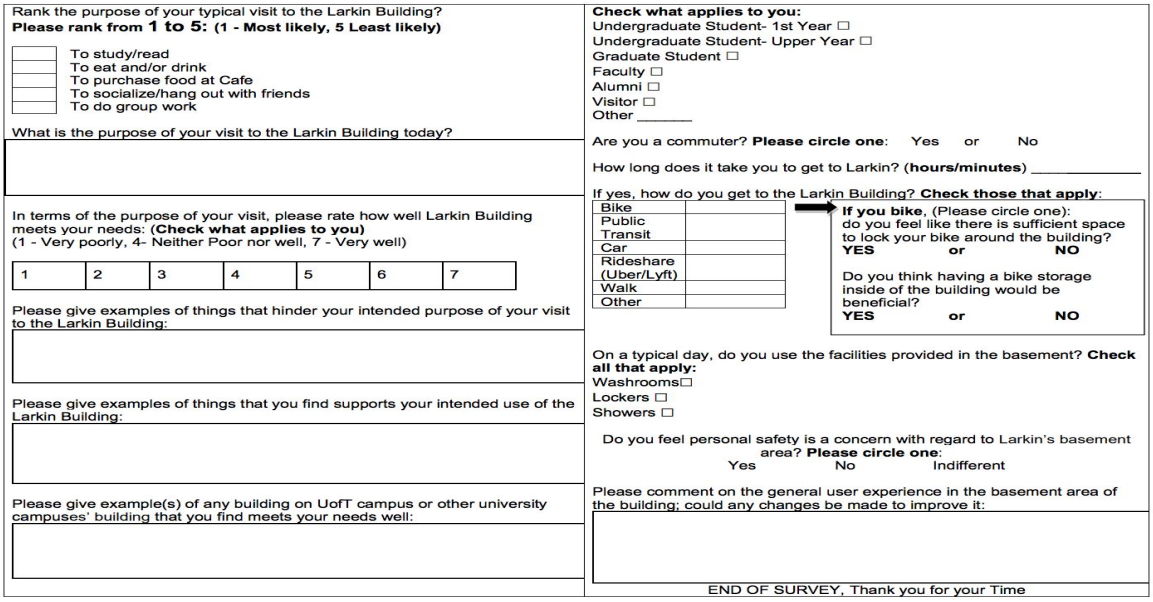
Our client specified to us that they would like to evaluate the community that uses the space and facilities of the Gerald Larkin Building. While it has a large range of occupants that occupy the building space, the client reinforced to us that they did not want to evaluate staff or employees in the building (those who have offices), however, transient staff or employees from the campus at large who happened to occupy the common space were welcomed participants. Since this space is built around the needs of students, commuters and short-term usage occupants, this scope allowed us to focus our efforts in developing two methods; 1) a transient style questionnaire to evaluate the users' experiences of the spaces in question with quantitative data and 2) a semi-structured interview to probe users and collect more qualitative data.



(Building Use Study survey that was utilized)

Building Use Studies (BUS) surveys, developed in the 1980s, are used to evaluate occupant satisfaction for clients. This methodology aims to generate feedback to help improve future quality and performance of the building. The BUS survey entails a standardized questionnaire which is designed to cover aspects such as but not limited to, comfort, occupant needs, productivity, health and building image. Along with answering Likert Scale, Polar and General questions, participants in our research also provided written feedback and comments. Throughout the first phase of our study, we were assisted and advised by Sylvia Coleman and Adrian Leaman in the preparation of the BUS survey. The BUS also provided our project and

client with results that are benchmarked against a database of similar buildings to see how our building compares and in which areas it may need improvements.



Rank the purpose of your typical visit to the Larkin Building?
Please rank from 1 to 5: (1 - Most likely, 5 Least likely)

- To study/read
- To eat and/or drink
- To purchase food at Cafe
- To socialize/hang out with friends
- To do group work

What is the purpose of your visit to the Larkin Building today?

In terms of the purpose of your visit, please rate how well Larkin Building meets your needs: **(Check what applies to you)**
(1 - Very poorly, 4- Neither Poor nor well, 7 - Very well)

1	2	3	4	5	6	7

Please give examples of things that hinder your intended purpose of your visit to the Larkin Building:

Please give examples of things that you find supports your intended use of the Larkin Building:

Please give example(s) of any building on UofT campus or other university campuses' building that you find meets your needs well:

Check what applies to you:
Undergraduate Student- 1st Year ☐
Undergraduate Student- Upper Year ☐
Graduate Student ☐
Faculty ☐
Alumni ☐
Visitor ☐
Other _____

Are you a commuter? **Please circle one**: Yes or No

How long does it take you to get to Larkin? **(hours/minutes)** _____

If yes, how do you get to the Larkin Building? **Check those that apply**:

Bike	
Public Transit	
Car	
Rideshare (Uber/Lyft)	
Walk	
Other	

If you bike, (Please circle one):
do you feel like there is sufficient space to lock your bike around the building?
YES or NO

Do you think having a bike storage inside of the building would be beneficial?
YES or NO

On a typical day, do you use the facilities provided in the basement? **Check all that apply:**
Washrooms☐
Lockers ☐
Showers ☐

Do you feel personal safety is a concern with regard to Larkin's basement area? **Please circle one**:
Yes No Indifferent

Please comment on the general user experience in the basement area of the building; could any changes be made to improve it:

END OF SURVEY, Thank you for your Time

(Supplementary survey that was utilized)

In addition, we developed a supplementary survey questionnaire in consultation with our client and with advice from Sylvia Coleman. This is a single-page survey in conjunction with the transient BUS that covers subjects that our transient BUS survey does not address and topics that our client raised concerns for, such as the purpose for visits. This additional survey occurred simultaneously as the transient BUS, creating a single-page, double-sided questionnaire to evaluate the users' experiences of the Larkin Building. It also contains multiple styles of questions: Likert Scales, Polar and General Questions, and Comment and Written Responses.

Interview questions

Food services:

What is your opinion on the food service provided in the Buttery?
Is having a food service a good use of space for the main floor?
If not, what would be the best purpose for the Food Services space?

Accessibility:

(Accessibility can be defined as "the University of Toronto's goal to create a community that is inclusive of all persons and treats all members of the community in an equitable manner. In creating such a community, the University aims to foster a climate of understanding and mutual respect for the dignity and worth of all persons."):

Rate how important accessibility is to you? (1 being the least important, 7 being the very important)
1 2 3 4 5 6 7

How would you describe the accessibility situation in the Larkin building? Does it meet your understanding of an accessible building?
Is there any feature of the building that restricts or inhibits your use of the building?

Sustainability:

Are sustainable features in buildings important to you?
What sustainability features would you like to see incorporated into the building?

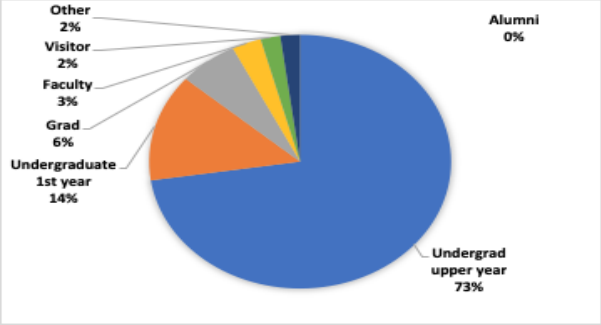
(Interview schedule that was utilized)

Finally, we conducted semi-structured interviews that followed an interview schedule covering topics such as accessibility, food services and sustainability, but allowed flexibility to probe additional questions and discussions. The reason to conduct interviews is to discover additional context on occupants' opinions of the building in question, to provide a qualitative aspect to our study and to evaluate topics not found in our modified BUS and supplemental survey. Interviews occurred following the completion of a survey. While not every participant surveyed was requested to answer our interview questions, interviews were also not limited solely to the surveyed participants. Since this is a common space with users departing and arriving throughout our research process, occasionally, new users would arrive during the interview process and participate in discussions and provide their feedback.

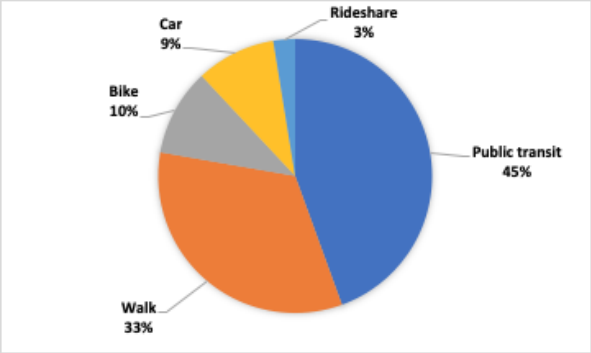
Our surveys and interviews were administered in person during the operating hours of the building (Monday to Thursday, 8am to 8pm; Friday, 8am - 3pm). We established a schedule over a 4 week period (October 22nd, 2019 to November 18th, 2019) that would allow us to survey and interview transient users of the building at various days and hours over a period of the fall university semester.

Main Findings:

Demographics:



Our final sample size was 106 survey respondents and 66 interview respondents. Our survey goal is to conduct a Post Occupancy Evaluation and aimed to better serve people in the Larkin Building, and thus our anticipated survey sample were faculty, staff, alumni, visitors and students who were using the common space on the first and basement floor of the Larkin Building. We surveyed 88 students, 3 faculties, 2 visitors and 13 people with no answer to this question.



Those surveyed also included their form of transport to and from the Larkin building. With 95 total respondents (less than our total prior as some respondents had left this question unanswered). Most of the occupants seem to be those who walk or use public transit followed by biking and a small majority using car or rideshare apps to travel to the Larkin Building. This information reinforces the site as a commuter hub and transit hub on the campus since it is nearby subway stations and bus routes.

BUS Findings:

Green icons on the BUS summary results indicate variables which had scores above the midpoint of the scale in comparison with other responses for the Larkin Building, and which benchmarked above other buildings in the database when compared for the same variable. Orange icons indicate variables which are above the midpoint of the scale compared against other responses for the building, but which rank lower when benchmarked against responses from other buildings.

Air overall:

Comfort overall:

Design overall:

Health:

Image to visitors:

Lighting overall:

Needs:

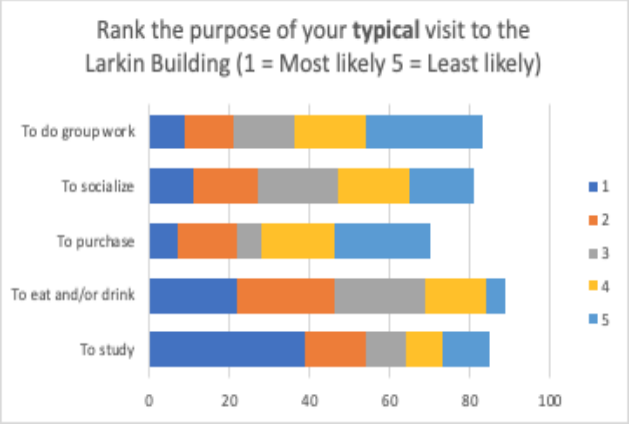
Noise overall:

Productivity:

Temperature overall:

The BUS survey results were analyzed by Adrian Leaman. According to the above graphs, atmospheric elements are perceived as the most satisfactory by the survey participants and are relatively high compared to the other building benchmarks. For example, 'Temperature' ranked in the 95th percentile, 'Air' ranked in the 94th percentile, and 'Noise' ranked in the 89th percentile. 'Image' is the most unsatisfactory element when compared to the other benchmarked buildings, which ranked in the 35th percentile. This is likely due to the outdated look of the first floor, with outdated chairs, tables, couches and garbage disposal boxes. Furthermore, the image may rank poorly because of how negatively the basement is perceived. Finally, although 'Health' was satisfactory, it lies on the lower end of benchmarked values compared to the rest of the factors analyzed. Comments on health mostly referred to the food available in the space in that it is enticing to grab a snack that may be unhealthy. Overall, the BUS survey results indicate that the occupants enjoy the space, but that building image could be improved.

General Usage:



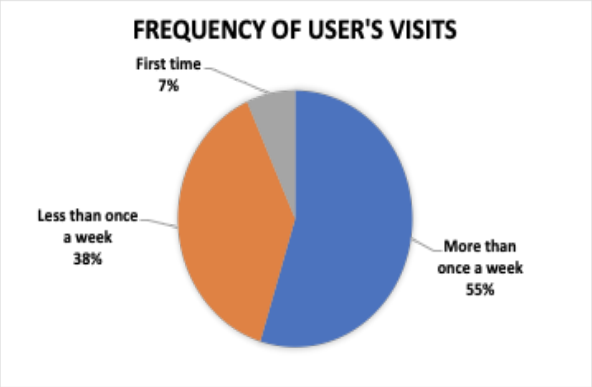
Of those interviewed and surveyed, one of our major concerns was to consider how people use the building. This is to justify and present a hierarchy of changes to consider given what people may need differs for social uses and academic uses of the building. In our survey, we created a table for participants to select and rank their "typical purpose of visit" while at the Larkin Building. Due to the nature of the rankings, each option will serve as their own sample, each adding to 100% of the responses. Thus, we found that 63% of respondents either put 'to study' as their first or second choice and 51% of respondents either put 'to eat and/or drink' as either their first or second choice. This shows that academics and food represent a sizeable majority of the purposes people are most likely to visit Larkin for. This is also corroborated

through our survey question that asked “What is the purpose of your visit to Larkin today?” with 39% attending the building to study and 26% attending the building to eat. This shows that most visits will either include studying, eating or drinking.

Though these results may indicate a large sway towards academic uses, an important limitation given the timeframe of the project is that most of our surveying was conducted during the middle of midterms as well as the week coming up to and during reading week. This may have swayed what is ‘typical’ within October-November because this period includes a large fraction of assignments, tests and deadlines.

Wayfinding:

Wayfinding is defined “as a system [that] enables people to orient themselves in physical space and navigate from place to place.” (City of Toronto, 2017, p. 4). This pertains to the Larkin Building in being able to convey information of spatial location to and from points of interest including, washrooms, food services and exits. It was found through our research that 12 survey respondents specifically commented on the difficulty of navigating the building or lack of knowledge of points of interest. Likewise, interviewees expressed similar complaints even without a prompt regarding wayfinding.

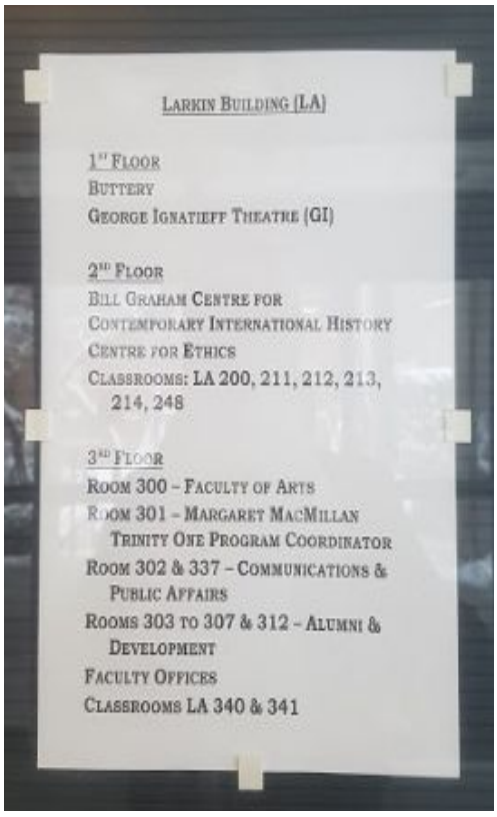


The Larkin Building is a space that is open, flat and relatively ‘accessible’ but it does not allow for seamless usage of the building. There is a lack of maps and cohesive signage available for first time and infrequent users who lack knowledge and awareness of the spaces and facilities. Through our BUS, we had the opportunity to survey frequency among participants in the space. Through this mapping of the users’ frequency, we can understand that 45% of those surveyed either use the space less than once a week or it is their first time in the building. From this data, there is infrequent interaction with the spaces and facilities for many of the users and this is reflected in participants’ comments where 12 respondents directly mention the confusion of both the First and Basement floors. Comments included:

“Washrooms are hard to find”
“Signs might be confusing for first-timers”
“Signage needs to be better”
“Doors should be labelled clearly.”
“The bathroom is creepy and kind of inaccessible because it’s hard to find.”

"I don't like how the washrooms are hidden."
"The washroom layout is very bizarre."
"I don't think there are washrooms on the first floor?"
"Have a small bathroom on the main floor."
"Wish people could use the lockers in the basement."
"Water fountains and washrooms could be more accessible."

These comments regarding confusion throughout our survey participants are aligned with and repeated in our interview process. The major issue that was found from our interviews was the overall confusion of the spaces and facilities provided in the Larkin Building. For example, when speaking to several interviewees about accessibility features like the accessible washroom, they were surprised to know that there even was an accessible washroom on the first floor. The same could be said about the water fountain provided on the first floor which several interviewees were seemingly unaware of. Even in the basement, respondents' expressed confusion as to what is available for use and what is out-of-bounds. Other common confusions included: not knowing that there is an elevator, not knowing that lockers are available for student usage and not knowing that there are photovoltaics on the roof.



Larkin directory signage

From our data collection, there is a clear understanding that users of the space on the first and basement floors are confused about the building's facilities and how to navigate themselves through the spaces. These are particularly concerning since roughly 45% of users in the building either are infrequent or first timer users, and it could ultimately decide whether they come back to use this space.

Through our time on site, we started to understand why there is a major concern with signage and wayfinding when we analyzed the state of the site. Signage throughout the site is perplexing and left us with a sense of confusion upon every visit. From lack of washroom signs to not knowing where to fill up water bottles, the space is disorganized and does not offer a clear or functional system for users to navigate themselves through the space.

The importance of wayfinding is crucial to the building's success in attracting visitors, satisfying their needs and allowing the building to properly connect with the community it is part

of. Though, in order to accomplish these things, wayfinding must be informative and efficient. The literature related to wayfinding indicates that well-formulated (simple, easy to read and understandable) systems save time and reduce the walking distance to arrive at destinations. One study used virtual reality to investigate the time saving benefits of horizontal and vertical signage, discovering that regardless of signage type, its presence and information cut down travel time and distance by nearly half (Vilar, Rebelo & Noriega, 2014). This shows that signage, regardless of implementation method, can improve wayfinding, saving people time and energy, allowing for more time to satisfy occupant needs and connect with the building through exploration.

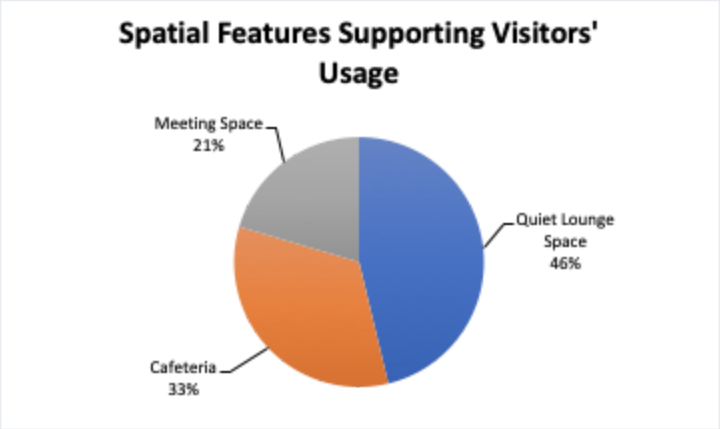
However, signage is not the only problem in regards to navigation to key points of interest. Throughout the building navigation, problems extend to locating features that are also important to occupants. With further considerations and improvements to wayfinding, occupants will be able to take full advantage of features that are often overlooked due to a lack of knowledge. This includes knowing where outlets, garbage cans and water fountains are. As mentioned, people often had trouble finding all of these items. With outlets, it may be that they lack the quantity needed for a space as large as the first floor of the Larkin Building, though with garbage cans they are often camouflaged and lack little to no contrast between them and the wall given their similar colour (Image in appendix). These poor design choices are reflected almost entirely across the first and basement floor of the building, though with simple changes it can greatly improve how people navigate and become aware and knowledgeable of what features Larkin has to offer.

Effective Space Management:

Given several responses from students indicating their primary use of the building is that of a study space, design features in the Buttery must be conducive to learning and efficient working. The physical environment of the Buttery at the Larkin building has a notable effect on student productivity as it scored a 69 percentile in comparison with BUS data benchmarking. Furthermore, factors such as room layout and amenities influence users' positive experience of the space, therefore, enhancing these elements can create a space more accommodating to learning (Horr et al., 2016).

Several respondents also noted the importance of being able to eat in the Buttery or noted that they come to the Buttery with the specific intent of eating there. As a result, it is important to support both of these needs. Literature also shows that continuous access to food and beverages is an integral component of the learning experience, rather than requiring the student to stop eating (Larsen, 2010). This may also support the results we've seen in the BUS survey citing the Buttery as a space that encourages productivity.

Creating a sense of place can be understood as a crucial aspect to the productivity of an academic space. Thomas Sens (2009) argues that in creating a sense of place, key components such as group study and collaboration and individual contemplation are key to student success. He goes on to describe the features that building design can provide to support these key components which include: collaborative meeting spaces, individual quiet spaces, and possible cafeteria and lounge spaces (Sens, 2019). Based on our supplementary survey results, positive factors of the Larkin building primarily surrounded the first floor Buttery area and its layout. We coded a section in our supplementary survey which specifically asked for aspects of the building that supported the user's intended use. Analyzing the data by searching for key terms such as "cafeteria space", "quiet lounge space" and "meeting space".



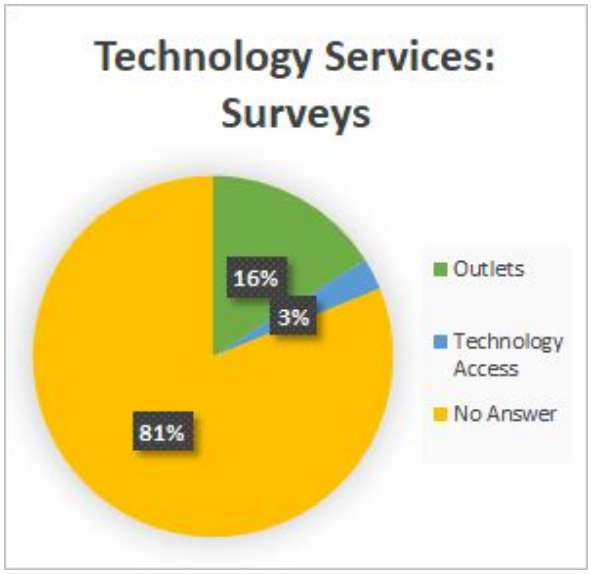
Note: Percentages displayed in chart are based on total answers, which include multiple responses from the 73 answered surveys.

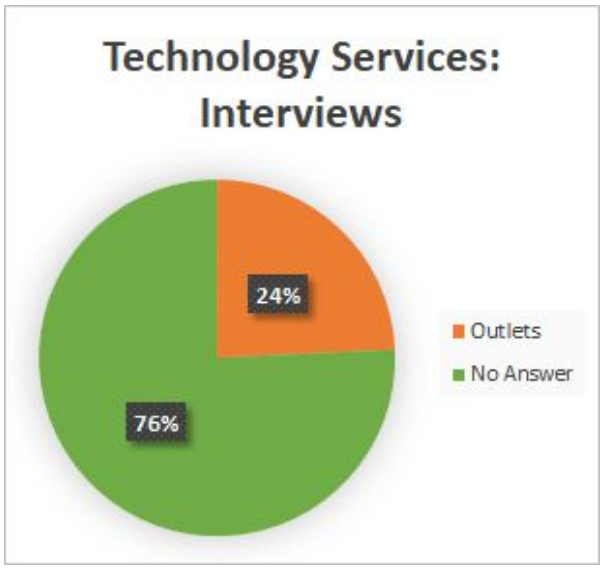
Of the 106 surveys completed, 73 people surveyed answered the box that asks about features "that support their intended use of the space". Of those 73 responses, 43 participants specifically complimented the quiet lounge space, 31 on the cafeteria space, and 19 on the collaborative aspect of the space. These results show that the current, multi-functional layout of the main floor supports students' productivity as the space is divided and allocated efficiently for users.

Technology Services:

Technology services are services that make use of modern technologies such as internet, hardware, technical support and electronics. Our survey and interview results both indicated that a lack of outlets and accessibility to technological services was a frequent concern for users. These results are further supported in that a majority of users use the space to study and lounge, and our demographic results show that a majority are students. From our research, survey data indicates that approximately 1 out of every 5 participants commented on the survey regarding lack of tech services, citing both outlets, wifi and lack of space for laptops during busy hours.

These concerns are repeated in interviews, where approximately 1 in 4 participants stated there were not enough outlets available for their visit.



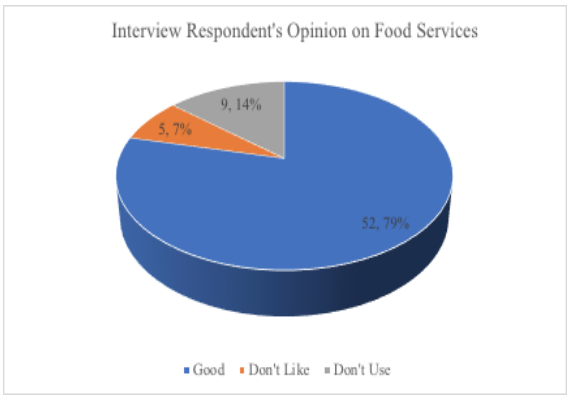


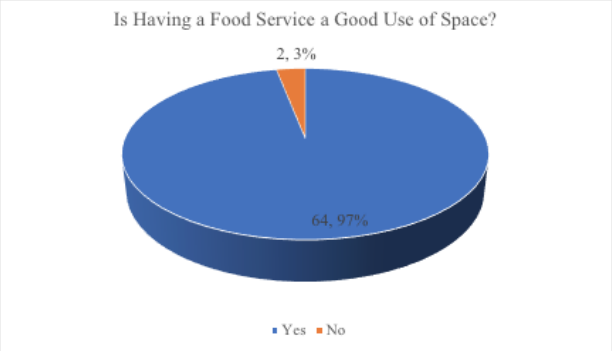
As university campuses modernize how education is delivered, common spaces need to keep up with the demand and role electronics and technology services play on universities. It is integral to meet the needs of students, faculty and visitors to support group work, collaboration, research and individual needs (Brown-Sica, 2012; Sens, 2009).

Interview Findings:

Food Services:

We coded interview responses to summarize the respondents' opinions on the food services into the following three codes: 1. Good, 2. Don't like and 3. Don't use. The food services are seen as being a positive part of the main floor of the Larkin Building, with 79% of interview respondents positively describing the food services when asked to describe their opinion on it. It is important to note that despite the fact that 14 respondents mentioned either not using or not liking the food services, 12 of these 14 mentioned that they feel that the food services are convenient for commuters or people in a rush, thereby affirming that the food services is a good use of space. 2 respondents adamantly did not like the food services and believed that it should be replaced with something more useful like study spaces.

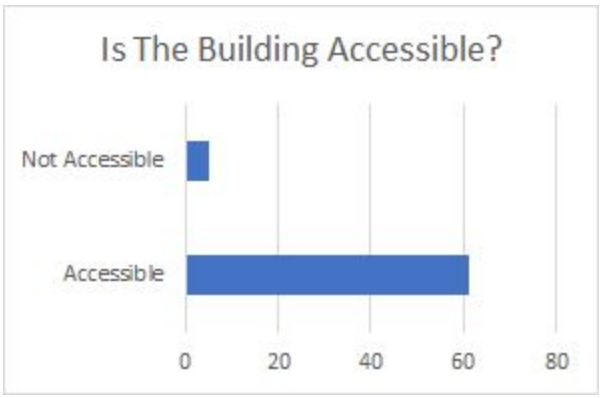




As a result, 97% of respondents believed that the food services is a good use of space in the main floor. Therefore, the food services are a positive aspect of the main floor layout and should remain in the floor plan.

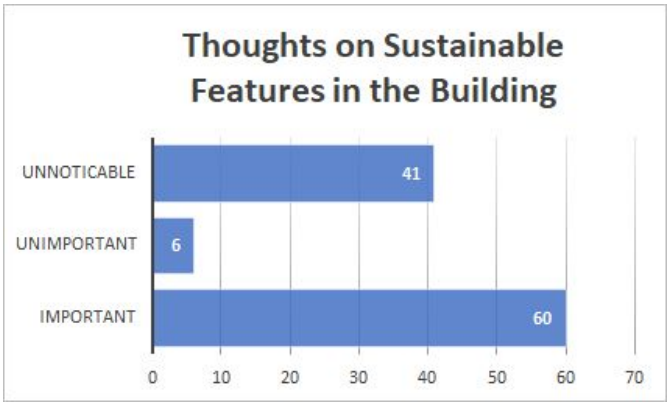
Accessibility:

In general, a majority of interview respondents described the building as being accessible and as meeting the standards of an accessible building (61 interviewees think its accessible v. 5 who think it's inaccessible). However, it is important to note that all the interview respondents mentioned that accessibility is something that is of low importance to them. Nevertheless, the respondents did acknowledge that accessibility is important to others who may have a disability. Furthermore, when describing the accessibility of the building, several interviewees brought about a host of concerns for accessibility that may be lagging. For example, 14 interview respondents mentioned that they could imagine someone with disabilities having difficulty getting to the upper and basement floors. Furthermore, 4 interviewees expressed inadequacy with the ramp to the building, mentioning that it is poorly located and very long which may deter someone with disabilities to access the building. Nevertheless, as a whole, occupants feel that the building is accessible and were able to point out several accessibility features (Ramp, sliding doors, automatic door opening feature) that are conducive to an accessible environment.



Sustainability:

The interviews reflect that the community likes sustainability features and sees them as being important to the experience of a building, but that these features often go unnoticed since 41 respondents mentioned that they normally don't notice these features.



Nevertheless, the Buttery is a place which can help magnify sustainable features, since it has a food court layout, and according to the literature, food courts are the best locations for universities to have sustainable features, like green walls (Montacchini, Tedesco & Rondinone, 2017). Furthermore, when asked to give suggestions on sustainability features that occupants would like to see incorporated into the building, it was evident that a lot of respondents themselves were very unfamiliar with sustainability features, which potentially affects the noticeability of these features. Suggestions given by respondents included: more greenery, compost bins, water fountains for reusable bottles, renewable products, an accessible outdoor green space, and air dryers in washrooms to save paper.

Miscellaneous:

Although never explicitly asked to speak about the basement, 32 interview respondents negatively described the basement, reinforcing the creepiness and unwelcoming atmosphere it presents to users. This is in line with what respondents wrote out in their surveys. Furthermore, a major issue that was found from our interviews is a general confusion of the spaces provided in the Larkin Building, which was also evident in survey comments.

(Word cloud of words respondents used to describe the basement)

Recommendations:

We highly recommend creating a user-friendly building with effective and organized wayfinding and proper signage. This includes increasing signage in popular corridors, updating existing signs and creating simple and high contrast to background signage (Mandel & Johnston, 2017). These considerations have been shown to save time and energy (Vilar, Rebelo & Noriega, 2014). Moreover, create signage to key points of interest that often go unnoticed such as the water fountain, washrooms on the first and basement floor and the elevator, which will increase usage while allowing for more efficient walkthrough, limiting confusion and increasing knowledge of building features and their locations. This is an opportunity for a system that can span across the whole Trinity College campus to create a cohesive, simple and fluid system of the campus between new, old and future buildings.

Consider incorporating more sustainability features within the building. Respondents liked the idea of having sustainable features in the spaces and according to the literature, simply adding greenery as a sustainable feature can improve acoustics within buildings by suppressing noise pollution (Wong et al., 2010), remove particulate matter in the atmosphere and other pollutants thereby improving indoor air quality (Przybysz, Nesisian & Gawronski, 2019) and

positively impact occupants psychological wellbeing (Montacchini, Tedesco & Rondinone, 2017; Sen, 2009).

Consider further research into outdoor space management. While in interviews, only a few mentioned the desire for outdoor seating, our research was limited due to the fact that outdoor seating is not available at the site, and we researched during the end of fall months with poor weather. Since there is a large availability of outdoor space surrounding the site, further investigation into outdoor space use or performing a pilot project for outdoor seating is recommended.

We recommend modernizing waste disposal boxes. The boxes lack signage, only utilize wording, and are camouflaged with the colour of the wall. As shown in the literature, disposal boxes containing either icons or pictures of permitted disposal items improve sorting disposal compared to signs containing only words (Wu et al., 2018). Thus, a new waste disposal box with wording and pictures of acceptable disposal items could be employed thereby improving sustainability.

Consider creating a ramp for access on Devonshire Place as the ramp provided is inconvenient, requiring individuals to travel around to Hoskins Avenue in order to use the ramp. Moreover, create additional washrooms on the first floor to meet accessibility needs.

We recommend keeping the food services as part of the floor layout as it contributes to a sense of informality that is in contrast to library settings and occupants like its convenience.

We recommend considering allocation of space, rooms and/or cubicles for Larkin and/or the new development since our exploration of the space indicated it was intensely used for studying. Even though noise levels and productivity were positive rated features on the site, there were some complaints of noise levels and no private study spaces available. By introducing study cubicles and/or group rooms, this would provide specific sectionalisation of the space(s) (Sen, 2009) and potentially add to the productivity levels of the community. Further research around private rooms needs to occur to explore if these features are needed by the community.

We recommend improvements around the image of the building through aesthetic changes to the lounge couches' upholstery, tables and chairs. Further consideration will have to be made around maintenance and replacement of furniture features.

We recommend exploring sectionalisation. While the Buttery is host to sectional features such as large tables, small tables, a side bar and lounge sections that are a positive commented feature. We did find comments that stated seating, typically during high volume rush periods

such as lunch hours, is hard to find. This would drive away the community from spending time, purchasing food and/or feeling comfortable in the spaces. We suggest that Larkin adds individualized seating areas that are at a comfortable table-seat height. Incorporating individual seating options would allow for better usage of the spaces for the community members and has been implemented in libraries and common spaces across campus.

We recommend inquiring about the HUBB furniture system designed by furniture company, Gispen in collaboration with Mecanoo, the same architects that Trinity College has hired and is working with for their new building. HUBB is a modular furniture system that is made up of different components which can be rearranged in order to meet the needs of the users (See Appendix). Mecanoo and Gispen have also designed these components so that they are easily reused, replaced or repaired exemplifying their sustainability.

We recommend that there needs to be improvements to the basement either through a complete revitalization or by improving lighting as suggested by 18 survey respondents.

We highly recommend adding floor outlets that are within proximity to tables and seating or adding tables that have outlets on the tabletop. Such tables exist in the Sid Smith Commons already and at various sites (libraries and commons spaces) across the University of Toronto and could also be incorporated in the first floor common space of Larkin.

Furthermore, our client stated interest on information for a proposed underground bike parking system for the basement of Larkin, however, our results show that only 10% of commuters use biking as a method of transportation. Despite our limited data on bike users, 13 out of the 14 bike users indicated that they would like indoor bike parking. The small sample size of bike users surveyed may be the result of the limited bicycle parking spots currently available at the Larkin Building which has been observed and represented in our supplementary survey results as 9 out of 14 users indicated that they do not feel there is sufficient bike storage around the building. We recommend to further explore Trinity's cycling population. Future research will be needed to explore the biking population and the biking community's needs, both on Trinity College campus and around the Gerald Larkin Building, as new developments and renovations occur.

Limitations:

Results for transient users are invariably skewed into a positive direction than for permanent users. This is because they spend less time in the building and so are less familiar with it. Also, they may be more tolerant of perceived faults if they like the building. For a fuller picture, permanent occupants' views would have to be assessed.

We had a limited time to get a representative sample of occupants. Having only roughly four weeks for data collection presented limitations to acquiring a wider range of users. The time frame also may have limited our ability to see changes in occupant needs (temperature control, noise levels, overall needs etc.) over the year. Due to this, our results may only reflect the overall results of the typical use of the building in autumn.

We also encountered limitations regarding our methodology and data collection. Specifically, due to the nature of conducting interviews (requiring more time and effort from the interviewee than compared to a survey) we were unable to interview every survey participant, oftentimes due to the unwillingness of the participants. This limited our ability to further connect correlations seen in certain measures in the Transient BUS Survey and views on food services, accessibility and sustainability. As well as the fact that we only had each user complete the survey and interview once we then create a hole in data as to whether users' ratings change over time.

Conclusion:

The Gerald Larkin Building, through our research, has been a staple to the Trinity College and University of Toronto community. It is a place that is utilized by many, whether for class, food, studying or passing the time on campus. This 1970's building offers a positive and common space for students, faculty and visitors to enjoy their time on campus. As discovered in the BUS survey, the building performs well in terms of general functionality categories like comfort, air quality, temperature etc. to transient users. Furthermore, the occupants like the multifunctionality of the space that is often not available in other spaces on campus where one could lounge around, eat, study and socialize. Nevertheless, the building has its flaws. Major issues discovered include:

- Issues of wayfinding and confusion over the spaces provided;
- The basement being creepy and unwelcoming;
- A lack of technological services;
- Building image.

Note:

Sample size for surveys totalled 106, however, the response rates for each survey question is variable because respondents chose to omit answering certain questions.

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Appendix

Link to BUS survey charts: www.usablebuildings.co.uk/15367

Info on HUBB technology can be found on the following link:
https://www.mecanoo.nl/Projects/project/192/HUBB-Learning-Environments?t=6

Images of Interior Building Signage:

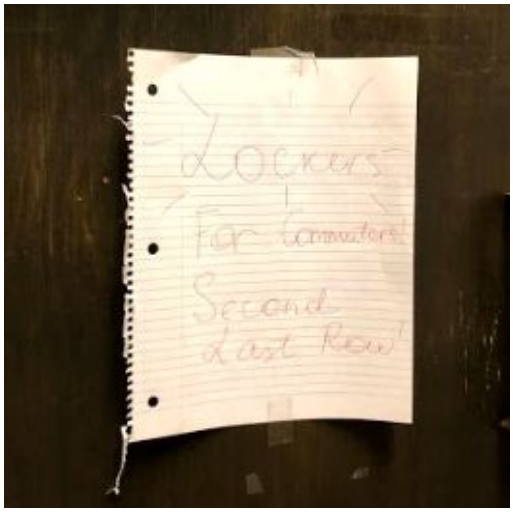

Image of Garbage: