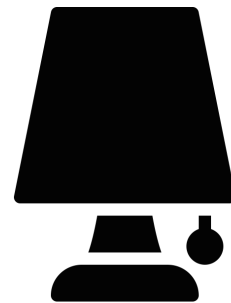
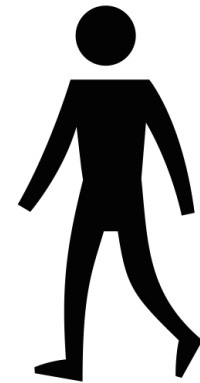
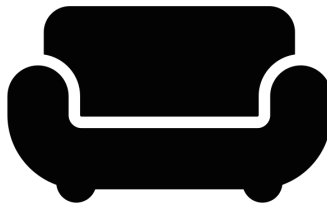


STUDENT SPACES: BEST PRACTICES

Prepared by Cooper Csorba, Planning Analyst



INTRODUCTION

The factors influencing students' experience in post-secondary institutions are well understood. A university's physical and social environment are both accepted as critical in a student's opportunity for growth and development. Both the physical and social environment are inextricably linked. A student's academic experience far exceeds the fleeting moments spent in lectures, seminars, and writing exams. A student's learning and development take place dominantly outside the classroom, and much of this time is still spent on campus territory.

Student spaces are places where social and academic life harmonize - learning as a student is often a social process that includes the collaboration of students answering problems and providing mentorship (Matthews, 2011). At their rudiments, they are places that succeed in integrating the basic human needs such as drinking, eating, taking breaks, and socializing with friends, or working among others to simply *feel social*. Their form and design are otherwise unrepeatable - no student space is certainly alike. Their uniqueness is also embedded in meaning and stories generated and shared by students. Their usefulness and value far exceed what they do on the surface - a place to study and meet. They have a remarkable influence on students' experience, their friendships, and memories - they are places we remember well.

This report will serve itself as an exploration into the state of student spaces at the University of Alberta. This is a challenging feat. For instance, empirical research into how student spaces enhance a student experience is almost non-existent. Empirical research has often been reserved for formal student spaces (i.e. a classroom or lecture hall). Only an ambitious and forward-thinking approach will succeed in this research.

A special thanks is extended to the following contributors who provided input and influenced the direction and objective of the document: *Andy Cheema, former Vice President Operations and Finance, Students' Union; Chris Fetterly, (Director) Student Innovation Centre; Kelly Hopkin, (Manager) Campus Architecture, Facilities and Operations.*

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A Place to Share Ideas

A Place to Prepare

A Place to Meet

Socialization, Belonging, Community

A Place to Collaborate

Group Work and Mentorship

A Place to Be Yourself

What should a Student Space include?

A Place for Shared Experience

A Place to Take a Break

A Place to De-stress

Eating, Drinking, Relaxing

A Place to Feel Safe

A Place to Grow and Develop

WHAT DID THE RESEARCH TRY TO ANSWER?

The research attempted to explore the following questions:

- What are the urban design features (the design features of the built environment) that allow student spaces to succeed?
- Are there attributes innate to a building (the site layout, the site location) that also allow student spaces to succeed?
- How can existing student spaces be retrofitted with design improvements to better engage students?
- How do student spaces across different faculties/buildings fare, and different forms of student spaces fare when tested against a formal assessment tool?
- How are we going to prioritizing student spaces over others?

WHAT SHOULD FURTHER RESEARCH EXPLORE?

The following research questions should be explored in consecutive research:

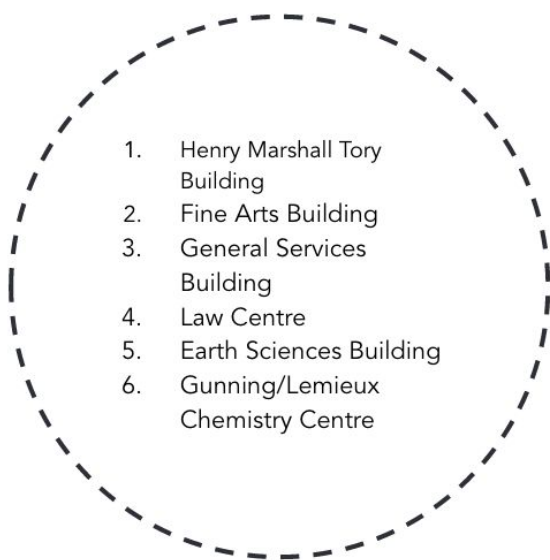
- How do students spend their time on campus during an average week?
- Do students feel restricted to certain student spaces?
- Do students go out of their way to access certain spaces?
- How can student spaces that don't exist be realized as potential sites?
- What factors have the greatest impact on increasing student spaces activity?
- What student design features do students value the most?

STUDENT SPACE CATEGORIZATION

STUDENT CENTRIC SPACE

Indicators

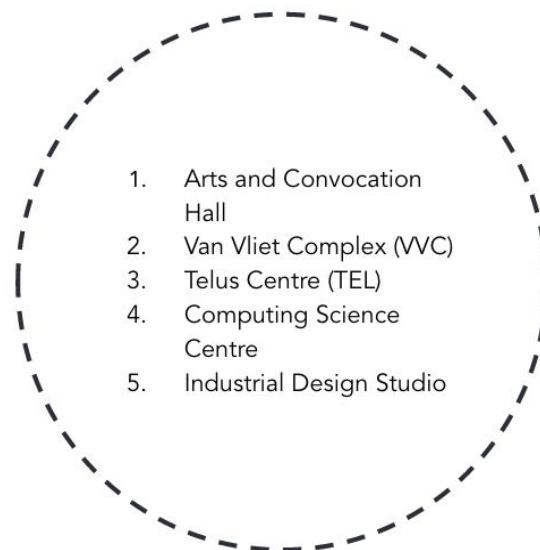
- Connected to the existing building network.
- Serves as a headquarters to a Faculty, or has the main function of being a student space.
- The abundant presence of classrooms, student services, and administrative offices.



SECONDARY STUDENT CENTRIC SPACE

Indicators

- Connected to the existing building network.
- Presence of classrooms, student services, and administrative offices.

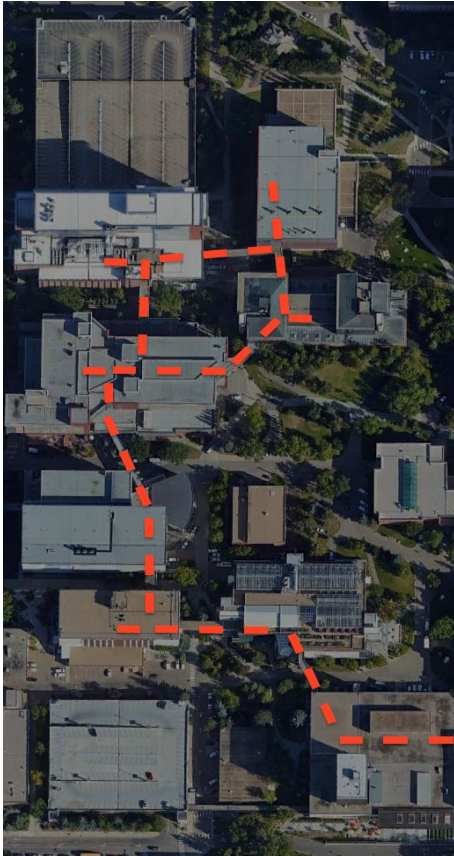


STUDENT SPACE PRESENCE

Indicators

- Disconnected from the existing building network.
- Presence of classrooms, student services and administrative office.

Network A

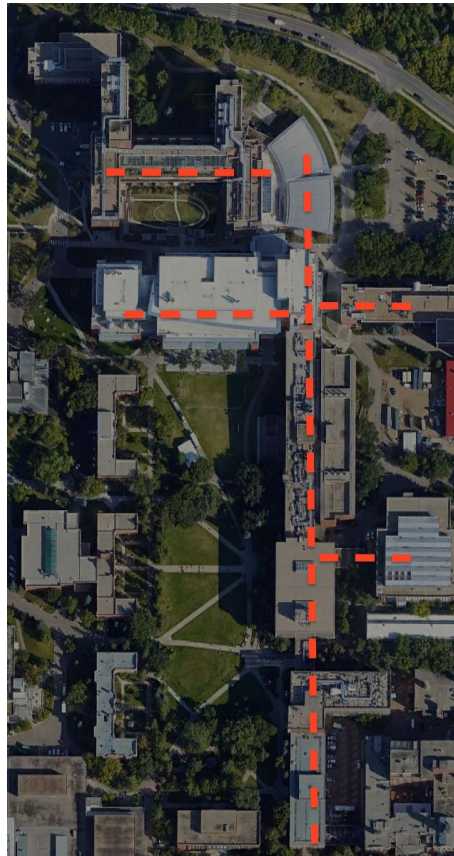


Buildings: Students' Union Building*, Agriculture Forestry Building, General Services Building, ETLC.

**Assessed separately from this document*

District: West, and North-West Corner of North Campus.

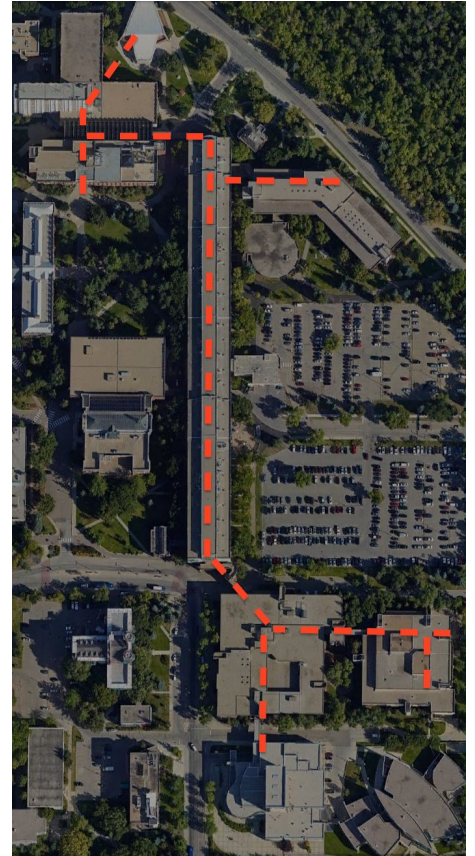
Network B



Buildings: South Academic Building, Central Academic Building, CCIS, Chemistry Centre, Earth Sciences.

District: Central of North Campus.

Network C



Buildings: HUB Mall, Fine Arts Building, Law Building, Humanities, Tory Marshall Hall.

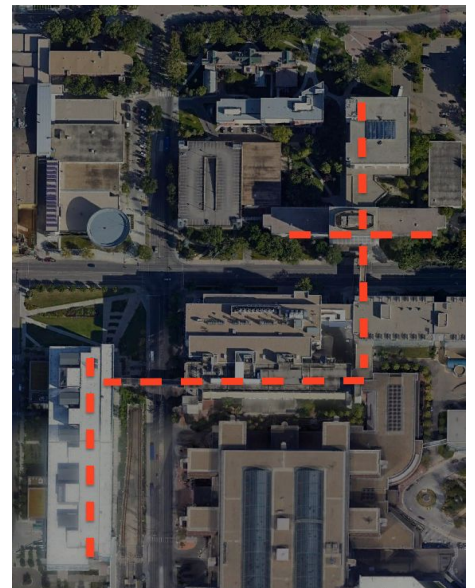
District: East of North Campus.

STUDENT SPACES NETWORK

Network D

Buildings: Education Centre-North, Education Centre-South, KATZ, Medical Sciences, ECHA.

District: Central to South-West Corner of North Campus.



RESEARCH METHOD

STUDENT SPACE CATEGORIZATION

This process took an inventory of student spaces on campus and delimited their characteristics into mutually exclusive categories. This was done by looking at the location of a building, what purpose the building serves on campus, and how space is connected.

STUDENT SPACE REPORT CARD

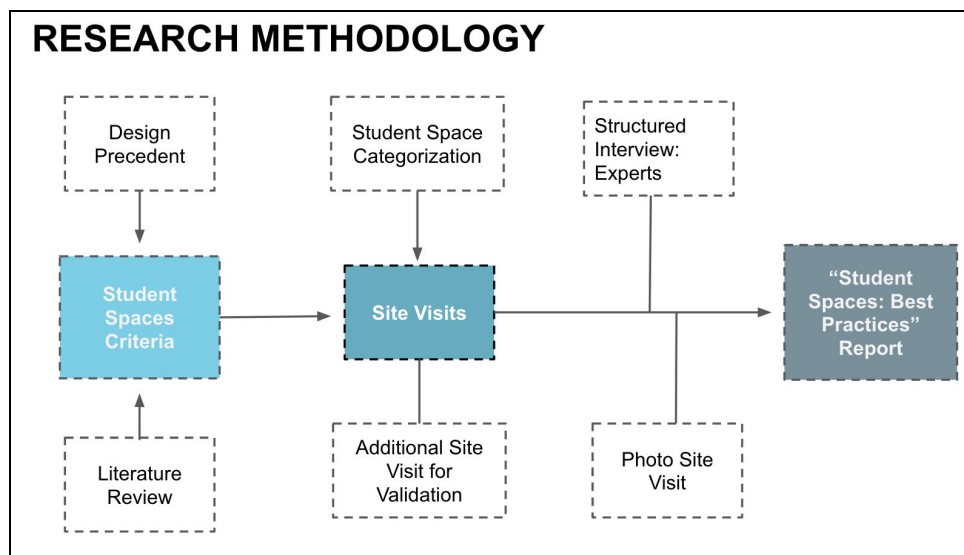
The Student Space Report Card measures the success of student spaces on campus using a 50 point system of comprehensive criteria. The criteria were helped informed by a literature review, design precedent (i.e. other cities and their policy documents), and interviews with professionals.

FORMAL SEMI-STRUCTURED INTERVIEWS

Semi-structured interviews were conducted to help develop the Student Spaces Report Card, to assist in generating more research questions, and to learn more about development at the University of Alberta. Three interviews were completed and their recommendations have significantly influenced the direction of this report.

SITE VISIT

Student spaces across North Campus were analyzed through making field notes during site visits to each student space. Additional site visits were also used to validate findings as well as take photos of key amenities in the spaces. Sites were chosen selectively to include a strong representation of student spaces in each category.



CRITERIA

The following criteria (or the “Student Space Report Card”) is a measurement tool to assess the quality of student spaces. The criteria were built, largely, through design precedent (municipal policies and their design guidelines for public places) and through a literature review. The full criteria are found in **Appendix A**.

USER IMPACT

User impact measures [flexibility](#), a measure to look at how students are physically using the space, including the types of activities space can accommodate. This measure also measures [system integration](#), a measure to determine how well space interacts in relation to the other student spaces in the vicinity.

ERGONOMICS AND USABILITY

Ergonomics and Usability measure [practicality](#), how comfortable is space is to use for any activity and for any type of user. Another measure is [light and window quality](#) to determine the quality and nature of lighting in the space throughout the day. Further, [darkness and seasonal](#) measure were included to measure how well the space succeeds during off-peak hours and during the winter season. A final measure includes [acoustics](#), a measure to determine how well the space works towards controlling noise.

UNIVERSAL ACCESSIBILITY

Universal Accessibility includes [physical and sensory access](#), a measure to look at how well space can accommodate users with physical and sensory impairments, and with what else can a user navigate the space. Second, [signage/wayfinding and cognitive access](#) is a measure to look at how well space can accommodate users with cognitive impairments, and the quality of the wayfinding elements in the space.

CONTEXT SUITABILITY

Context Suitability looks at [amenities](#), a measure to look at the presence of necessary amenities in the space (i.e. outlets, washrooms). Another measure includes [transit and travel](#), a measure to assess how well space falls in relation to main travel routes, the LRT, and car parks. The third measure is [vibrancy and art](#), a measure to look at the quality of the built environment, including the presence of art, landscaping and additional features.

ASSESSMENT GUIDE

LETTER GRADE

Letter	Percentage	Marks (out of 50)
A+	90-100	45 or higher
A	86-89	43-44
A-	82-85	41-42
B+	78-81	39-40
B	74-77	37-38
B-	70-73	35-36

C+	66-69	33-35
C	62-65	31-33
C-	58-61	29-30
D+	54-57	27-28
D	50-53	25-26
F	0-49	24 or lower

A letter grade will be given to each student space using the following grading system.

OBSERVATIONAL LENS

An observational lens was used when writing field notes on the student spaces during the site visits - this includes the priorities on what to consciously pay attention to in the space and how to understand if the space is working well to engage students. The following 5 principles (inspired by the Downtown Public Places Plan (City of Edmonton, 2018)) encompass the observational lens:

Safe and Inclusive:

Student spaces should be safe, secure and inclusive places for students and visitors.



Accessible and Connected:

Student spaces should be accessible for all users and connected by indoors and/or outdoor corridors.



Vibrant and Enjoyable:

Student spaces should strive to encourage healthy behavior, and visually be vibrant places to work, learn and socialize in.



Community Oriented:

Student spaces should encourage vertical and horizontal student interaction, and should also work towards serving as key community forming places.



Sustainable and Green: Student spaces should bolster the University's mandate towards environmental sustainability.



REPORT CARD

AGRICULTURE FORESTRY CENTRE ATRIUM AGRICULTURE FORESTRY (AF)

STRENGTHS

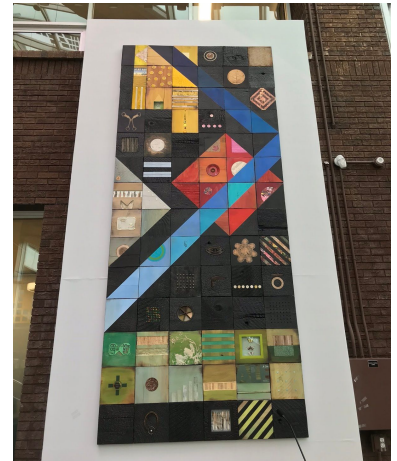
- The abundance of different student spaces in the same building.
- Wall art is a reflection of the students and staff.
- Warm and abundant lighting.
- Throughways are wide and clear of obstruction.
- The Atrium serves as a landmark in the space, and it's used by all users, and frequently for events.

OPPORTUNITIES

- Improvement of acoustic features.
- Seating furniture is not conducive for all users.
- Tiled flooring presents a nuisance to wheeling.

GRADE: B+

USER IMPACT: 8/9
ERGONOMICS & USABILITY: 17/21
UNIVERSAL ACCESSIBILITY: 3/5
CONTEXT SUITABILITY: 10.5/15
Total: **38.5/50**



ARTS & CONVOCATION HALL LOUNGE & 3RD FLOOR

ARTS AND CONVOCATION HALL (A)

STRENGTHS

- Historical building that serves as a campus landmark.
- Well used for events and performances.
- Headquarters for several departments.
- Third-floor student space allows for student collaboration.

OPPORTUNITIES

- Wheelchair access to space is almost non-existent.
- Student furniture is outdated, mismatching, and impractical.
- Student Lounge is not well heated and lacks abundant lighting.
- Student Lounge does not present itself as accessible throughout the day.

GRADE: F

USER IMPACT: 6/9
ERGONOMICS & USABILITY: 8.5/21
UNIVERSAL ACCESSIBILITY: 0.5/5
CONTEXT SUITABILITY: 7.5/15
Total: **22.5/50**



CENTRAL ACADEMIC BUILDING PEDWAY

CENTRAL ACADEMIC BUILDING (CAB)

STRENGTHS

- Strong proximity to several vendors open beyond 4 pm.
- High student foot traffic through the space.
- Strong natural lighting during the day time.

OPPORTUNITIES

- Improvement of acoustic features.
- Seating furniture is not conducive for all users.
- Tiled floor presents a nuisance to wheeling.
- Table size and height is impractical for work and groups.
- There is no clear theme in the space or delineation from the rest of the building.
- Inadequate lighting at night, nor is the lighting well distributed.

GRADE: F

USER IMPACT: 5.5/9
ERGONOMICS & USABILITY: 8.5/21
UNIVERSAL ACCESSIBILITY: 2/5
CONTEXT SUITABILITY: 4.5/15
Total: **20.5/50**



CCIS CENTRAL & SURROUNDING

THE CENTENNIAL CENTRE FOR INTERDISCIPLINARY SCIENCES (CCIS)

STRENGTHS

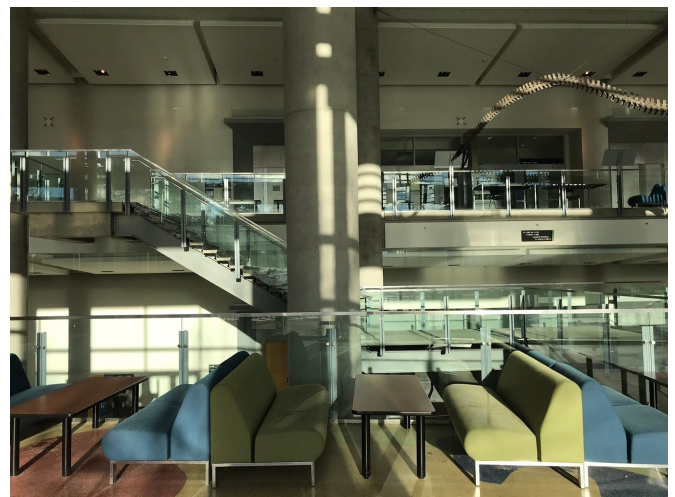
- Numerous seating options are available in an exceedingly high traffic space.
- Natural sunlight is maximized through south floor-to-ceiling windows.
- Throughways are sufficiently wide and clear.
- Natural surveillance is an exemplar on campus.
- Spacious tables allow for collaborative work.
- Art is meaningful to the context.

OPPORTUNITIES

- Increase abundance of outlets.
- Include gender-neutral washrooms.
- Building hours close earlier than most campus facilities.

GRADE: A-

USER IMPACT: 7/9
ERGONOMICS & USABILITY: 20.5/21
UNIVERSAL ACCESSIBILITY: 5/5
CONTEXT SUITABILITY: 9.5/15
Total: **42/50**



CCIS & BIOLOGICAL SCIENCES LANDING

THE CENTENNIAL CENTRE FOR INTERDISCIPLINARY SCIENCES (CCIS)

STRENGTHS

- A clear and distinct theme brings life to the basement floor.
- Student Innovation Centre punctuates the space visually and with more activity.
- The incoming vendor will serve students into the night.
- A variety of seating options are available.
- The lighting is abundant and designed to match the seating areas.
- The main floor wall art meaningful to the building.

OPPORTUNITIES

- Blank walls can be minimized in the basement.
- Include gender-neutral washrooms.
- Building hours close earlier than most campus facilities.

GRADE: A-

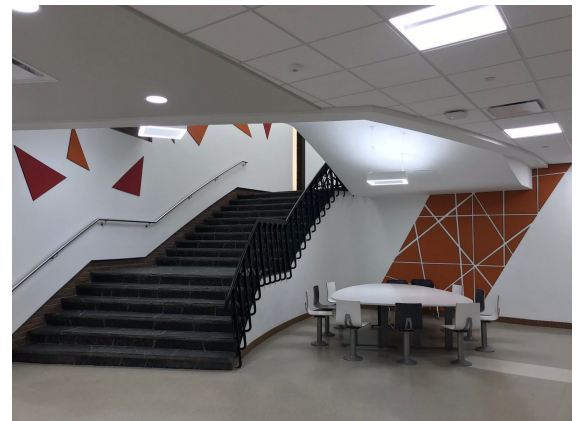
USER IMPACT: 6.5/9

ERGONOMICS & USABILITY: 19.5/21

UNIVERSAL ACCESSIBILITY: 4.5/5

CONTEXT SUITABILITY: 11.5/15

Total: **42/50**



CHEMISTRY UPPER & LOWER

GUNNING/LEMIEUX CHEMISTRY CENTRE (C)

STRENGTHS

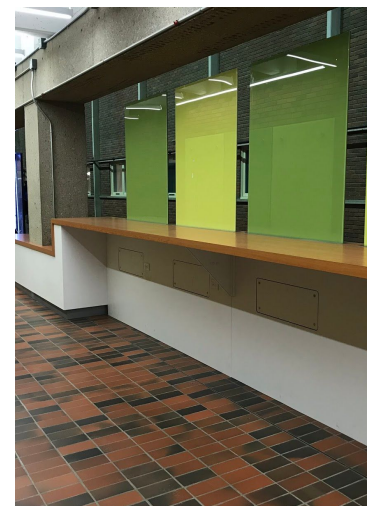
- The first floor improvements give students an opportunity to linger in the space.
- Public art and historical objects are frequent in the space.
- Natural surveillance enhanced on the first floor.
- Renovated upper floors (3rd and 4th) allow the building to be seen in another way.
- Strong proximity to student-centric spaces with vendors and activity.

OPPORTUNITIES

- Second-floor seating is inconspicuous and dated.
- Floor tiling is not conducive for wheeling.
- Lighting at night is not sufficient for student work.
- Chairs on the second floor are uncomfortable.
- West side of the first floor represents a student space opportunity.

GRADE: **D+**

USER IMPACT: 5.5/9
ERGONOMICS & USABILITY: 8/21
UNIVERSAL ACCESSIBILITY: 3/5
CONTEXT SUITABILITY: 11/15
Total: **27.5/50**



COMPUTER SCIENCE CENTRE LOUNGE

COMPUTER SCIENCE CENTRE (CSC)

GRADE: D

STRENGTHS

- Central orientation serves a student hub within the building.
- Presence of a whiteboard and projector allow for space adaptation.
- Natural surveillance in the space is strong.
- Table set-up allows for collaborative student work.

OPPORTUNITIES

- There is not a clear theme in the space.
- Furniture is outdated and damaged.
- There are no art or additional decorative features in the space.
- Temperature and acoustics in the space can both be improved.
- The seating is not comfortable to sit in for long periods of time.
- The space is supported by limited lighting sources overhead.

USER IMPACT: 3/9
ERGONOMICS & USABILITY: 13/21
UNIVERSAL ACCESSIBILITY: 4/5
CONTEXT SUITABILITY: 5.5/15
Total: **25.5/50**



ECERF

ELECTRICAL AND COMPUTER ENGINEERING RESEARCH FACILITY (ECERF)

STRENGTHS

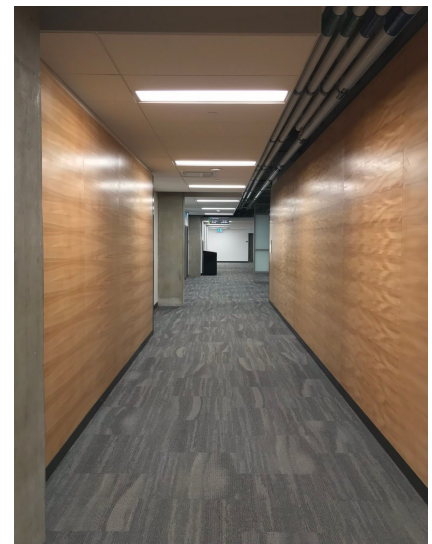
- The student furniture serves as an exemplar of ergonomic and usable furniture.
- There are multiple sources of lighting in the space, and lighting is designed with the table set-up.
- Lighting is abundant at night.
- Partitioned spaces serve as acoustic controls, and opportunities for different forms of work to take place.
- Proximity to several vendors.
- Highly frequent outlets and several monitors serve as additional draws to space.

OPPORTUNITIES

- Empty wall displays represent an opportunity to add art or student work.
- The inclusion of a gender-neutral washroom

GRADE: A-

USER IMPACT: 8/9
ERGONOMICS & USABILITY: 18.5/21
UNIVERSAL ACCESSIBILITY: 4.5/5
CONTEXT SUITABILITY: 8.5/15
Total: **40.5/50**



ECHA CAFETERIA & SURROUNDING

EDMONTON HEALTH CLINIC ACADEMIC (ECHA)

STRENGTHS

- Collaborative study rooms are present in the space.
- Colourful furniture theme adds life and vibrancy to space.
- Presence of food vendor serves as a draw and operates beyond 4 pm.
- Seating serves itself well for all users.
- Student spaces in surrounding hallways allow for more private work.
- Lighting is designed to complement the table set-up, and the lighting is welcoming after dark.
- Hospital and administrative office proximity turns the space into a community space.

OPPORTUNITIES

- Blank walls have not been well minimized.
- Outlets could be more frequent.

GRADE: A+

USER IMPACT: 9/9
ERGONOMICS & USABILITY: 21/21
UNIVERSAL ACCESSIBILITY: 4.5/5
CONTEXT SUITABILITY: 11.5/15
Total: **46/50**



ETLC CAFETERIA

ENGINEERING TEACHING AND LEARNING COMPLEX (ETLC)

STRENGTHS

- Functions well both as a cafeteria and as a group study destination.
- High traffic location sees it succeed as an anchor point in Engineering.
- Natural lighting and other lighting features are abundant.
- Natural surveillance is strong throughout the space.
- Use of several building materials coupled with strong sightlines makes the space visually appealing.
- Seating options are abundant and can accommodate the ebb and flow of student traffic.

OPPORTUNITIES

- Blank walls could be minimized.
- Presence of public art is absent.
- The inclusion of gender-neutral washrooms.

GRADE: **B+**

USER IMPACT: 7/9
ERGONOMICS & USABILITY: 19/21
UNIVERSAL ACCESSIBILITY: 4/5
CONTEXT SUITABILITY: 9.5/15
Total: **39.5/50**



EDUCATION STUDENT LOUNGE

EDUCATION CENTRE NORTH (ED)

STRENGTHS

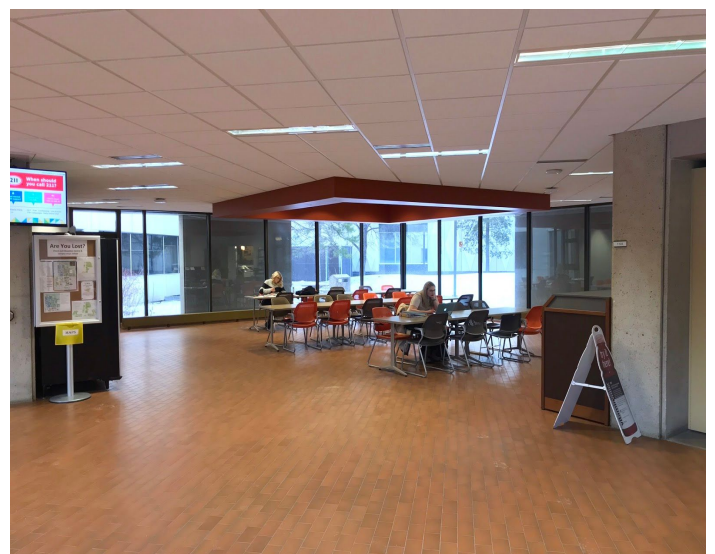
- The large floor-to-ceiling windows on the east and west provide strong natural light during the day.
- There are several identifiable seating options to accommodate any activity.
- The food vendor is a draw to space and operates beyond 4 pm.
- Western communal tables serve as a quieter working spot.
- Colourful furniture theme adds life and vibrancy to space.
- Strong natural surveillance from within.

OPPORTUNITIES

- Blank halls have not been minimized.
- Outlets could be more frequent.
- Lighting at night time is lacking when natural light disappears.

GRADE: A

USER IMPACT: 8/9
ERGONOMICS & USABILITY: 19.5/21
UNIVERSAL ACCESSIBILITY: 4/5
CONTEXT SUITABILITY: 12/15
Total: **43.5/50**



FINE ARTS BUILDING STUDENT SPACES

FINE ARTS BUILDING (FAB)

STRENGTHS

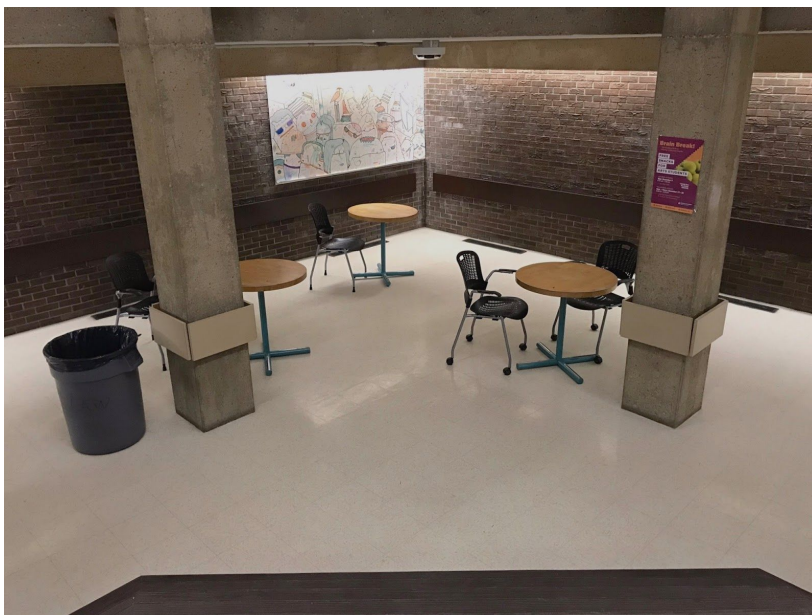
- Close proximity to several vendors.
- Public art presence is meaningful to space.
- Auditions/events, an abundance of department offices, and studio space creates a strong student community.

OPPORTUNITIES

- Lighting is inadequate throughout and is not well distributed.
- Space suffers from a lack of natural surveillance.
- Seating spaces are not accessible to anyone with physical impairments.
- Acoustic and temperature treatment is missing.
- Collaborative and individual workspaces are almost absent.
- Student spaces are not distinguishable.

GRADE: F

USER IMPACT: 2/5
ERGONOMICS & USABILITY: 6.5/21
UNIVERSAL ACCESSIBILITY: -1/5
CONTEXT SUITABILITY: 10/15
Total: **17.5/50**



GENERAL SERVICES BUILDING 2ND FLOOR

GENERAL SERVICES BUILDING (GSB)

STRENGTHS

- Space has a distinct theme and is fun and distinguishable.
- IST Services presence is a draw to space for more users.
- Large collaborative tables exist amongst individual reading chairs.
- Glass screen allows students to feel comfortable with their back turned towards activity.
- Natural surveillance is strong.
- Lighting is designed to match the seating locations.

OPPORTUNITIES

- Blank walls have not been minimized.
- No presence of public art.

GRADE: A

USER IMPACT: 7/9
ERGONOMICS & USABILITY: 20.5/21
UNIVERSAL ACCESSIBILITY: 5/5
CONTEXT SUITABILITY: 10.5/15
Total: **43/50**



HUB MALL LOUNGES & CENTRAL

HUB MALL (HUB)

STRENGTHS

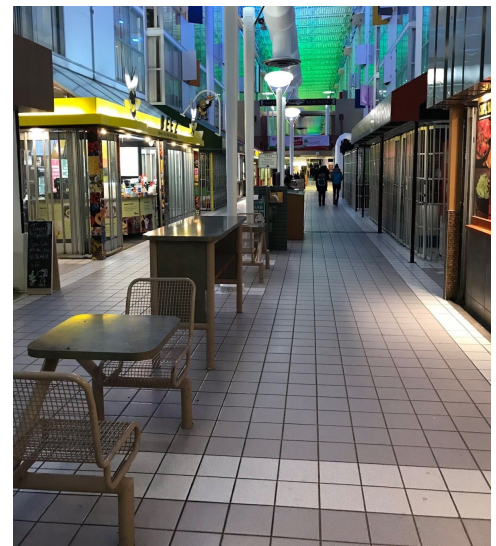
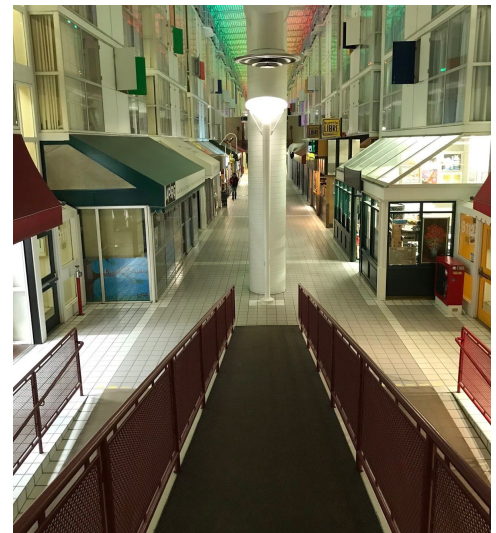
- Space is a student anchor point with countless vendors.

OPPORTUNITIES

- Most of the student spaces are not available to those with physical impairments.
- Tables and chairs are uncomfortable, disproportionate, and in poor condition.
- Carpet design is not an aesthetic choice but exists to hide dust/debris.
- Natural views out of the space are not leveraged.
- There is no distinct theme in the student spaces.
- The main throughway has staggered furniture with sharp edges.
- Floor tile is poor for wheeling.
- Seating areas in retail spaces do not present themselves as student spaces.
- Outlets are exceedingly infrequent.
- Student spaces are used as storage facilities for old furniture.

GRADE: F

USER IMPACT: 8/9
ERGONOMICS & USABILITY: 9/21
UNIVERSAL ACCESSIBILITY: -2/5
CONTEXT SUITABILITY: 6.5/15
Total: **21.5/50**



HUMANITIES STUDENT SPACES

HUMANITIES CENTRE (H)

STRENGTHS

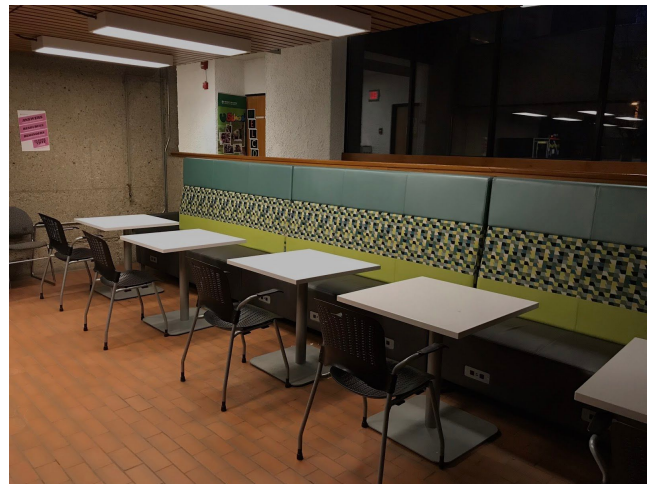
- Renovated main floor provides additional study space.
- Individual study desks are frequent.
- Natural light is frequent on the west side of the building.
- A strong presence of classrooms creates a strong student environment.

OPPORTUNITIES

- Wheel access into the physical building is limited.
- Floor tiling is not conducive for wheeling
- Natural surveillance is poor.
- Lighting in the building is inadequate during the night.
- Temperature and acoustics are not well controlled for.
- Outlets are few and far between.
- Mismatch furniture ruptures any noticeable theme from forming.

GRADE: F

USER IMPACT: 6.5/9
ERGONOMICS & USABILITY: 6.5/21
UNIVERSAL ACCESSIBILITY: 2/5
CONTEXT SUITABILITY: 4/5
Total: 19/50



TORY & BUSINESS ATRIUM

TORY MARSHALL HALL (T) / ALBERTA SCHOOL OF BUSINESS (BUS)

STRENGTHS

- Entire space is designated as a student space and its recognizable to students for serving this purpose.
- Natural light is abundant.
- Sightlines are interesting, and natural surveillance is strong.
- Generates high student traffic.
- Vendor operates beyond 4 pm.
- Space can accommodate different scales of events and tabling.

OPPORTUNITIES

- Bench seating areas do not serve most users well.
- Lighting at night is inadequate and cold.
- Room for more art installations and other decorative features.
- East side of space is unwelcoming and has remained an afterthought.
- Outlets could be more frequent.

GRADE: **C**

USER IMPACT: 7/9
ERGONOMICS & USABILITY: 15/21
UNIVERSAL ACCESSIBILITY: 2/5
CONTEXT SUITABILITY: 8.5/15
Total: **32.5/50**



VAN VLIET GSA LOUNGE & SURROUNDING

VAN VLIET COMPLEX (VVC)

STRENGTHS

- Multiple sources of lighting make the space usable throughout the day.
- Natural lighting is strong on the north side of the student lounge.
- The partitioned room allows for quieter student work.
- Several of the spaces can be used for different scales of events.
- Vendor operates beyond 4 pm.
- Murals and permeability into activity spaces (i.e. gyms) enhance sightlines.

OPPORTUNITIES

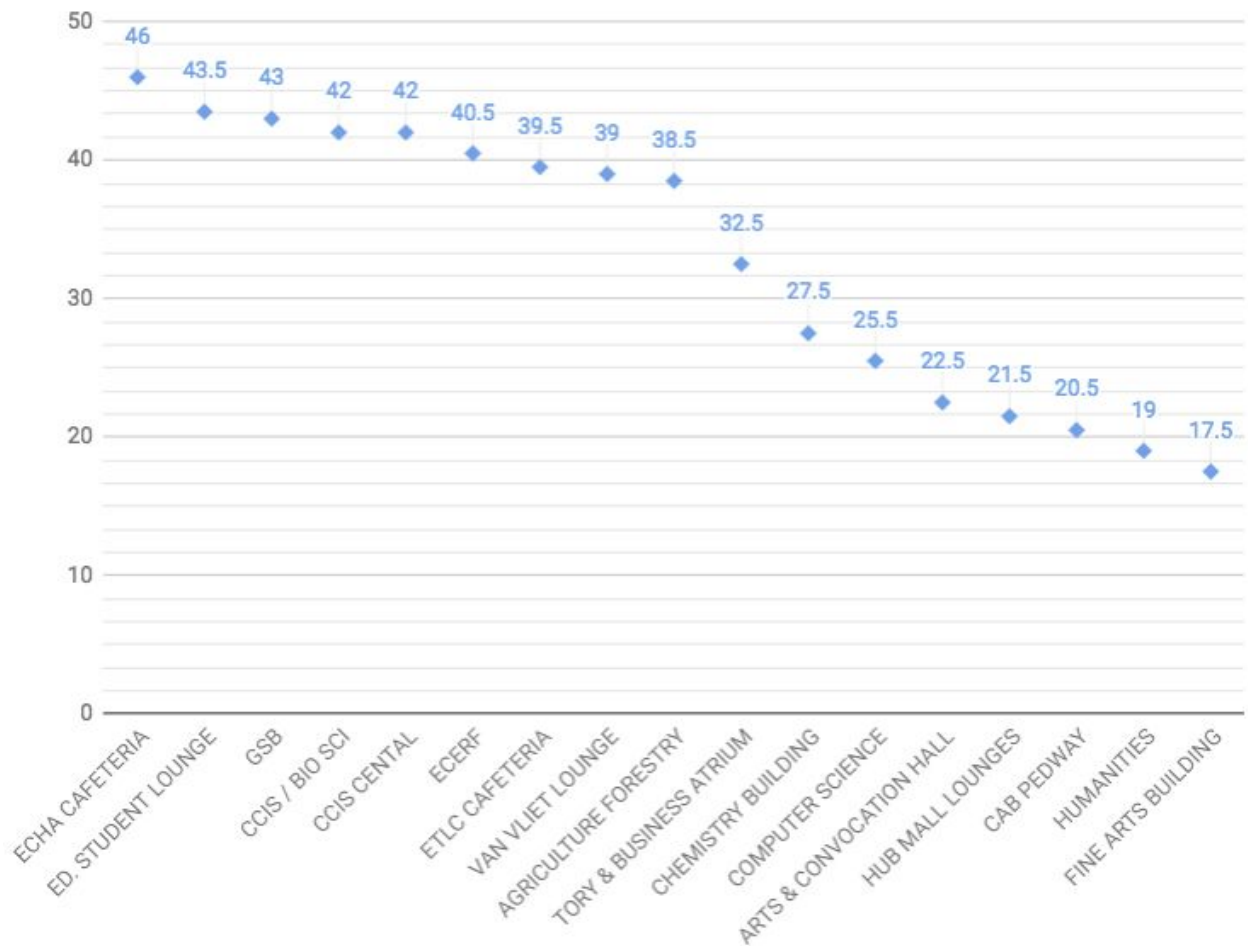
- Clustered tables in student lounge serve as a barrier to those with mobility impairments.
- Blank walls are not entirely minimized.
- Outlets could be more frequent.

GRADE: **B+**

USER IMPACT: 7/9
ERGONOMICS & USABILITY: 17.5/21
UNIVERSAL ACCESSIBILITY: 4.5/5
CONTEXT SUITABILITY: 10/15
Total: **39/50**



OVERALL



BUILDINGS BY CATEGORIZATION

Below is the list of buildings that underwent an assessment against the criteria in the study. Each listing includes the building's assessment category and the network to which it belongs.

Student Centric Spaces:

- Agriculture Forestry (Network A)
- CCIS (Network B)
- ECHA (Network D)
- ETLC (Network A)
- Education North (Network D)
- Humanities (Network C)
- Tory/Business Atrium (Network C)

Secondary Student Spaces:

- Central Academic Building (Network B)
- Chemistry Building (Network B)
- ECERF (Network A)
- HUB Mall (Network C)
- Fine Arts Building (Network C)

Student Space Presence

- Computer Science Centre (Network Absent)
- Van Vliet (Network Absent)
- Arts (Network Absent)

RECOMMENDATIONS

WHEN EVALUATING THE ROLE OF A STUDENT SPACE, WE NEED TO UNDERSTAND A STUDENTS LIVED EXPERIENCE ON A UNIVERSITY CAMPUS.

How much time do students physically spend on campus? How much time do students spend on campus excluding the time spent in their classes? What is the set of steps a student takes throughout their day while attending classes and commuting throughout the campus?

Each of these questions helps illustrate the lived experience of a student, from the start of the day until the time they leave. For some students, their day begins with a walk from a neighboring residence house or hall. The walk is short, and spatially, from the moment the student wakes up, their morning begins on a university campus. For others, their day begins in a household beyond the point from which a student can walk. This student has a proclivity to spend a lot less time on campus - the cost of commuting to campus intrigues the student to have their household satisfy a greater role in their routine.

This is certainly not a binary model, but it is a spectrum of unique student experiences that is largely dictated by the student's proximity to campus. Student spaces will serve a different role for students depending on their typical lived experience as a student. For some, they may be a place to settle down for hours at a time, and to negotiate time to socializing with a friend, working on a class project, or answering a pile of emails. For others, they serve as a quick fix in between classes to casually work on assignments. A well-designed student space, then, in turn, must be adaptable, flexible, and conscious of the unique lived experiences of students. Further, well-designed student spaces should also help simplify the number of steps students take throughout the day and provide any student a greater reason to stay on campus longer.

Recommendation 1: Focus energy on student engagement practices that help generate a narrative of the unique student lived experiences on campus through storytelling and/or visual illustration. Let students tell us their story.

Recommendation 2: Moreover, focus on student engagement practices that help determine which student spaces students like to spend time in, how far they go out of their way to access their preferred spaces, and what types of activities are achieved in the space.

Recommendation 3: Determine what design interventions are needed across campus to entice students to stay on campus longer, and to help simplify their routines.

STUDENT SPACES SHOULD BE UNDERSTOOD AS PART OF A NETWORK OF OTHER STUDENT SPACES, AND EFFICIENCIES IN A NETWORK ALLOW STUDENTS TO EFFORTLESS SPEND TIME ON CAMPUS.

Let's take the Agriculture Forestry and Environmental Life Sciences Building as an example. There are four distinct student spaces in this single building, not to mention the presence of another student space in the General Services Building a minute walk away, and an abundance of student seating in the Students' Union Building. Students not only have a lot of seating options, but they have complimentary student spaces. For instance, the Agriculture Forestry Atrium is designed for more sedate studying and small group conversation. Whereas the neighboring space just north of it is almost exclusively tables of 4 and informal couch seating - this space can better serve collaboration and noisiness. The proximity and diversity of neighboring spaces give students several options without having to move too far out of their way.

Further, let's stay on the same example. The diverse student spaces must not only be complimentary, but they must not have either an under capacity or overcapacity of seating. If the Atrium has an under the capacity of seating in the space, and the adjacent north space has an adequate amount of seating, students would be tempted to move furniture from one space to the next, or alternatively, walk further than intended to find a space to satisfy a similar use. The same can be said about space amenities, like outlets. If a student is intending to settle down in a space that has few and/or unavailable outlets, then the obvious decision is to move locations to find another student space.

The lesson here is that student spaces must be coordinated in their design, and the coordination has to be understood as part of the Student Spaces Network (page.5), the main travel routes students take between buildings. A student space does not have to satisfy every possible use to be regarded as a successful space. Instead, the student space simply needs to make sense in relation to the other student spaces in the area, and not have an overcapacity or under capacity in seating furniture or amenities.

Recommendation 4: As part of the selection criteria for choosing student spaces to invest in, It is necessary to understand if there are efficiencies or inefficiencies in the network a student space is a part of. In turn, design interventions in the selected space can be targeted to best address any network inefficiency in the area.

Recommendation 5: Generate a list of the obligatory amenities space should have.

STUDENT SPACES CURRENTLY SUCCEED UNDER WORKING HOURS AND SUFFER COME NIGHT TIME. OVERCOMING THIS FEAT CAN REALIZE ANOTHER 4 TO 5 HOURS STUDENTS SPEND ON CAMPUS.

This idea is illustrated best with student spaces that have plentiful activity throughout the day and retrieving a seat for yourself and a group of friends becomes a sport in itself. Think Education Student Lounge, CCIS Main, and Van Vliet GSA Lounge. Each is the beneficiary of serving as an anchor point in the building, receiving large amounts of natural sunlight, and has vibrant and comfortable seating areas. However, this level of activity drops off markedly when most students finish their classes, and this is accelerated when daytime becomes short and temperatures are less cooperative.

Edmonton is a northern city that includes unique regional characteristics - a combination of prolonged cold temperatures, darkness, and of course, snow and ice. When a city and its structures are unresponsive to these conditions, and thermal comfort is not designed into our plans and architecture, our behavior responds by resembling winter hibernation (Winter City Design, 2016). Less time is spent in public spaces, and more time is spent flitting between a few locations, often between home and select locations. A university campus is not immune to this. Student spaces become a less desired commodity, and students will leave them when a setting sun is imminent. Well designed student spaces must be viewed as “safe, comfortable, desirable and aesthetically pleasing” (2016) to succeed in these conditions.

There are secondary variables that can explain a drop off in student space usage. First, it’s the absence of a vendor in the space, in other words, a magnet for additional student activity, different types of users in the space, and increased natural surveillance from within. Moreover, it’s not chiefly the presence of a vendor, but it’s also the hours at which they operate. Most vendors close their doors around 4 or 5 pm. Having the presence of vendors that students enjoy in and around our student spaces that are open for business beyond the early afternoon, can help generate several additional hours of activity in the space.

Another variable would include the sense of security in the student space - spaces that don’t succeed to make students secure in less light and activity will not generate any noticeable activity. This phenomenon is linked to our regional characteristics and vendors in the space.

Recommendation 6: When thinking of student spaces to prioritize, they must be thought of in

their capacity to generate an addition 4-5 hours of campus activity. Stated differently, are there design interventions that can remarkably increase the comfort, activity, and security in space?

STUDENT SPACES ACROSS THE BOARD SUFFER FROM THE FOLLOWING DEFICIENCIES:

Design Features (each point represents a recommendation to improve the existing state)

- **Spacious Tables:** While those who scored well on the report card had spacious tables to facilitate group work, many were narrowly beyond the point of the table being considered spacious. Only in few examples were dimensions exceeded.
- **Table Clusters:** The same can be said about table clusters. Generally, there is a logical order and clustered table arrangements in most spaces. However, one repeated problem remains to have tables too clustered, representing a barrier with physical impairments to navigate the space.
- **Distributed and Warm Light:** Most student spaces have the presence of at least 2 sources of lighting, and a surprising number of spaces at least have some natural lighting. A noticeable amount of spaces do not have well-distributed lighting nor do they create a warm and well-lit environment after dark.
- **Vendors:** While several student spaces have at least one vendor operating until or after 4 pm, exceedingly few have the presence of more than one in the building, and few have vendors operating after 4:30 pm.
- **Acoustic Features:** Getting the acoustics correct in space can allow space to have several different uses thrive simultaneously. A lot of the places do not have dedicated acoustic features to control noise.
- **Floor Tiling:** A handful of student spaces use a flooring material that either induces glare and surfaces not appropriate for all footwear. A similar amount of student spaces use pattern harmful to those with mobility impairments.
- **Outlet Abundance:** More than half of the student spaces do not have a strong presence of outlets. In a number of cases, there are exceedingly few outlets in some of the spaces.
- **Blank Walls and Public Art:** Most student spaces can improve on the front of minimizing the number of blank walls in the space. The same can also be said about the presence of public art. This represents an opportunity to enliven student spaces with art that is meaningful to the building, the students, and staff.

At A Glance (each point represents a recommendation to improve the existing state)

- **Arts Buildings:** A failing grade was given to each student space that is on the east side of campus (otherwise referred to as “Arts Buildings”). These spaces did particularly poor

in both the categories of *Ergonomics and Usability* and *Universal Accessibility*. This suggests these student spaces are less enjoyable to use and are certainly not designed for every user and ability.

- **Network Absent Buildings:** Student spaces in these buildings also received poor grades on *Ergonomics and Usability* and *Universal Accessibility*, including *Context Suitability*. This suggests that these spaces lack both the design and supporting amenities to allow students to easily navigate and succeed in the space. Their isolated nature also prevents them from benefiting from high foot traffic and surrounding student spaces that complement their use.
- **Exemplars:** ECHA Cafeteria, Education Student Lounge, GSB 2nd floor, and CCIS Main and Biological Sciences Landing, all represent high-quality student spaces. They should be looked towards as design successes that fulfill an important role for students. Only minimal design intervention is required for each to improve.

THE EXISTING STUDENT SPACE SELECTION STRUCTURE WILL CONTINUE TO SEE NETWORK ABSENT BUILDINGS SUFFER.

The process for how new student spaces emerge on campus is often spontaneous and inadvertently favors a particular type of university building and student.

More precisely, investments in student spaces on campus are often directed towards investments that will have the *widest effect* on students. Certainly, the idea of the widest effect can be interpreted in countless ways. However, this is best understood as a utilitarian investment, rather than one that is more egalitarian - buildings that are part of a network, receive high foot traffic, and have the support of the administration in the building, often succeed in getting spaces constructed first. While you get the *best bang for your buck* under this model, students in buildings that are disconnected from the network will see less investment in the spaces close to them. The same can also be said about spaces that are secondary student-centric spaces, absent of faculty administrative offices.

However, this does not touch upon the spontaneity reference made above. Student spaces in less populous buildings have recently been renovated, and they continue to be identified - mind you, this does not speak to the speed at which student space investments are recognized and executed. They often fall to the bottom of a priority list. The Students' Union can be the catalyst for allowing for spaces neglected under this model to see them receive an investment.

Recommendation 7: Work with the University Office of Architecture to determine the current

list of upcoming student projects and understand how the Students' Union can assist in getting projects in Network Absent Buildings moved at more haste. Moreover, identify spaces that are not on the current project list and weight them with an additional degree of urgency.

THERE IS A NEED TO DEVELOP A WAY TO IDENTIFY STUDENT SPACES THAT DON'T EXIST ALREADY.

How can we turn empty pockets of campus space into a destination that is recognized and sought after by students? We could even build on this idea. How can we allow students to play a critical role in the conception of these spaces, including their design?

Starting a new student space from scratch is an exciting prospect. One, you're unconstrained by what has preceded it as no student space has preceded it. Second, giving students ownership over the identification and the design is guaranteed to reflect students well and to be well utilized after its conception.

Recommendation 8: Explore the idea of non-existent student spaces further. Upon first glance, are there identifiable pockets of empty space around campus with the capacity to become student spaces? How can students be engaged in the identification and design?

THERE IS ALSO A NEED TO BE CRITICAL WHEN WE DISCUSS UNIVERSAL ACCESSIBILITY ON CAMPUS.

Universal accessibility is a term that is becoming well understood in our society, and this is exceedingly true for university campuses. While having developers adhere to building codes that respect universal accessibility is irrefutably important, it's critical to engage those directly who have more difficulty navigating the built environment.

Environments need to be accessible, and when this is achieved, people can participate in the world around them with ease, and without having to compromise to do so (Burgstahler, 2013) . Comfort should be built into spaces for all users. However, "until people find themselves disabled in their surroundings, they cannot fully appreciate how the built environment and virtual environment can throw obstacles in their paths." (Universal Design Handbook, 2010)

Recommendation 9: Interview students, staff, and visitors who have physical, sensory, cognitive and visual impairments who are using our spaces on campus. The interview should learn about their experience navigating buildings, determining obstacles they come across, and what design considerations they would appreciate in new spaces.

APPENDICES

APPENDIX A: THE CRITERIA

The following criteria (or the “Student Space Report Card”) is a measurement tool to assess the quality of student spaces. The criteria were built, largely, through design precedent (municipal policies and their design guidelines for public places) and through a literature review. The formal semi-structured interviews helped structure and influence the addition of criteria, too.

USER IMPACT

FLEXIBILITY

What is being measured:

- How many people are using the space?
- How are people using the space?
- What uses can the space accommodate?
- How available is the space?

What is the acceptable threshold:

- How many different uses can the space accommodate?
- **Uses Include:** Quiet and Individual Studying, Group and Collaborative Studying, Eating and Drinking, Linger or Socializing.
- The space the building is in is open throughout the week and remains open until when most buildings on campus close.

Weight Criteria:

- Per use class: **1 point (each) for a maximum of 3**
- Capacity for events: **1 point**
- The space is open until 10 pm or beyond: **1 point**

SYSTEM INTEGRATION

What is being measured:

- Is there a presence of other student spaces in the vicinity?
- Can a unique set of student experiences occur along the line on which the student is operating from?

What is the acceptable threshold:

- There are other student spaces in the vicinity, either in the same building or in a building immediately adjacent to it.
- If so, the intended use of the student spaces complement each other, and provide additional activities that one may not?

Weight Criteria

- Per Nearby Student Space: **1 point (for a maximum of 3)**
- The adjacent spaces complement each other: **1 point**

ERGONOMICS AND USABILITY

PRACTICALITY

What is being measured:

- What is the nature of the seating furniture (width, flexibility, comfortability)?
- Is the relationship between the seating and the table amenities practical?
- How are the tables clustered together?

What is the acceptable threshold:

- Is the seating comfortable and able to be used by people of different sizes and ability?
- Is the height of the table conducive for working and socializing?
- Are the tables clustered at a comfortable distance?

Weight Criteria:

- The seating furniture is appropriate for all types of users, and there are multiple seating types available: **1 point**
- The seating is comfortable to sit and work in: **1 point**
- The table is at a comfortable height: **1 point**
- The table is spacious for its chair grouping: **1 point**
- There is a logical placement of the seating areas and seating areas are not clustered too close together: **1 point (1 point each for a total of 2 points)**

LIGHT AND WINDOW QUALITY

What is being measured:

- How many sources of light are there? Is there a presence of natural lighting?
- What is the distribution of light in the space (even or distributed)?
- What are the windows looking towards? Is there a view of outdoor space?
- What is the line of sight out of, into, and within the space?
- Do the internal features in the space allow for natural light to be maximized?

What is the acceptable threshold:

- The aggregate of lighting in the space allows for all uses to take place.
- The orientation and nature of windows and walls maximize natural light passage.
- The surfaces generate natural surveillance through strong permeability.

Weight Criteria:

- There is a presence of natural lighting: **1 point**
- There are at least 2 or more sources of light: **1 point**
- The light is evenly distributed: **2 points (if completely) 1 point (if mostly)**
- The windows are looking towards landscaping or a point of activity: **1 point**
- There is natural surveillance in and out of the space: **1 point**
- The design features help guide natural light throughout the space: **1 point**

DARKNESS AND SEASONAL

What is being measured:

- What are the uses (the vendors) immediately in and around the space? What time do vendors operate in the space?
- What is the quality of lighting at after sunset in and leading away from the space?
- Does the space have controlled temperature?
- How is space oriented in relation to other buildings and exits?

What is the acceptable threshold:

- The space has uses (vendors) in the space that help attract foot traffic.
- The vendors operate beyond typical class hours.
- The space lighting after dark makes students feel safe and maintains an environment appropriate for studying.
- The space feels at the right temperature for the entire day.
- The space feels open and has immediate exits and logical connections.

Weight Criteria:

- There is a presence of at least one vendor in or adjacent to the space: **1 point**
- The vendors operate until or after 4 pm: **1 point**
- The lighting in the space is warm and welcoming after dark: **2 points**
- The student space has controlled temperature: **1 point**
- The space has nearby connections and exits out of the space: **1 point**

ACOUSTICS

What is being measured:

- What is the level of volume in the space?

- Is the generated noise mitigated through acoustic controls?

What is the acceptable threshold:

- The volume and nature of the sound are appropriate for the spaces main use.
- Is the level of volume in the space controlled by design/acoustic features?

Weight Criteria:

- The volume in the space is appropriate for its use: **1 point**
- There is the presence of acoustic features to control the noise: **1 point**

UNIVERSAL ACCESSIBILITY

PHYSICAL AND SENSORY ACCESS:

What is being measured:

- What are the conflict points in the space (i.e. flooring transitions, elevation changes, blocking amenities)
- Is the path clear of obstructions along the throughway and connecting paths?
- What is the quality of the movement/floor surface throughout the space?
- What are the widths of pathways? What is the width of the shortest distance in the space?

What is the acceptable threshold:

- Conflict points are not a threat to the users in the space, and the throughway is clear throughout.
- The site is used efficiently, comfortably, and with minimum fatigue (alternatively, is there a low tolerance for error in the design).
- There are no widths below Complete Street Standards (0.9 m for access points and 1.8 m for pathways).
- The floor is material firm, no-slip, and glare-free.

Weight Criteria:

- There are no conflict points in the space: **1 point**
- Each throughway is clear of obstruction: **1 point**
- The site can be used with minimum fatigue: **1 point**
- Flooring has noticeable glare and induces slipping: **-1 point**
- Flooring tile pattern is not conducive for wheeling: **-1 point**
- A pathway or entrance is below standards: **-1 point**
- There is no wheel access into the space: **-2 points**

SIGNAGE/WAYFINDING & COGNITIVE ACCESS

What is being measured:

- What is the nature of wayfinding and signage in the building (logical and minimal versus impractical and verbose)?

What is the acceptable threshold:

- The user can operate with the signage to instinctively make their way through the space without difficulty.
- The signage material is clear on what the user is to do next and uses common and familiar phrases that are easily understood.

Weight Criteria:

- Overall, is the wayfinding system minimalistic, clear on what the user is supposed to do, and is offered at key decision points: **1 point**
- The space is recognizable and differentiated through distinguishable facades, door plates, and/or a floor pattern: **1 point**

CONTEXT SUITABILITY

AMENITIES

What is being measured:

- What is the presence of washrooms and gender-neutral washrooms in the area?
- What is the presence of waste receptacles in the space?
- What is the presence of semi-public spaces (bookable rooms)?
- What is the frequency of outlets?

What is the acceptable threshold:

- Are the listed features (above) in the space?
- Does the space severely lack the availability of outlets?

Weight Criteria:

- A set of washrooms are in less than 100 meters of the space: **1 point**
- There is a presence of gender-neutral washrooms in the building: **1 point**
- Are there bookable rooms for student collaborative work, or does the space have well-partitioned areas for group work: **1 point**
- Are outlets frequent and in expected locations through the space: **1 point**
- There are exceedingly few outlets: **-1 point**
- There are zero waste containers in the space: **1 point**

TRANSIT AND TRAVEL

What is being measured:

- What is the distance to other an LRT entrance and to Car Parks?
- What is the distance to bicycle parking?
- How is the building connected to other buildings?

What is the acceptable threshold:

- There is noticeable bike storage outside the building.
- The space is within a 200m of an LRT Entrance or Carpark.
- The building is part of the pedway system.

Weight Criteria:

- Bike storage presence: **1 point**
- LRT within 200m: **2 Points (if 400m 1 point)**
- Car Park within 200m: **1 Point**
- Part of pedway system: **1 Point**

VIBRANCY AND ART

What is being measured:

- What is the presence of blank walls or features that create an edge on the space
- What are the presence and the nature of the public art in the space?
- Is there is a clear theme in the space?
- What is the inclusion of landscaping or other minor artistic considerations features (i.e. display boxes) in the space?

What is the acceptable threshold:

- Few blank walls exist, and where they are present, their presence is minimized.
- The space has a piece of public art. The public art is meaningful to the space.
- There is a clear and distinguishable theme in the space.
- There is an effort to include additional features to the space (This includes other artistic considerations and interior landscaping*)

Weight Criteria:

- Minimal and mitigated blank walls: **1 point**
- At least one piece of public art: **1 point**
- If so, public art is meaningful to its context: **1 point**
- There is a clear theme in the space: **1 point**
- *Presence of additional features: **1 point**

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