

**Student Wellbeing at UBC
Campus Planning Best Practices and Recommendations
for Promoting Health and Wellbeing**

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University of British Columbia

PLAN 579

December 09, 2014

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Student Wellbeing at UBC

Campus Planning Best Practices and Recommendations for Promoting Health and Wellbeing

Research Report

Prepared for:

UBC Wellbeing Initiative
UBC Office of the Vice Presidents, Students
UBC Student Development & Services
UBC Campus + Community Planning

Prepared by:

Jarvis Autey	UBC Department of Civil Engineering
Mili Baghela	UBC School of Population and Public Health
Victor Ngo	UBC School of Community and Regional Planning
Blair Underhill	UBC School of Community and Regional Planning

December 9, 2014

PLAN 579/SPPH 571: Public Health, Transportation, and the Built Environment
The University of British Columbia, Vancouver Campus



Civil Engineering
Faculty of Applied Science

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* Authors listed in alphabetical order by surname.

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Executive Summary

1.0 Introduction

UBC is currently developing the Wellbeing Initiative to promote the wellbeing, health, and social sustainability of its students, faculty, staff, and area residents as part of a joint Vancouver and Okanagan campus collaboration. The Initiative has the mandate to “advance human and ecological wellbeing at both campuses through engaging and building community, stimulating student learning and success, supporting faculty and staff development, and furthering research excellence.”

The Wellbeing Steering Committee, comprising of administrative, academic, staff, and student representatives from across UBC, have identified the need to better develop the connection between the built and natural environments of the campus to wellbeing and health as part of the Initiative. For the purposes of this report, the concept of wellbeing encompasses the following dimensions:

- Mental health (e.g. stress, mental illness, work life balance);
- Physical health (e.g. physical activity, nutrition);
- Social health (e.g. sense of community and belonging).

Students in *PLAN 579/SPPH 571: Public Health, Transportation, and the Built Environment* taught by Dr. Lawrence Frank in the Schools of Community and Regional Planning & Population and Public Health were retained to conduct research on how the following physical campus environments can be better designed from a health perspective:

- Formal learning spaces (e.g. classrooms);
- Informal learning spaces (e.g. individual and group study spaces, lounges, cafés);
- Campus public realm (e.g. open spaces);
- Surrounding community environment (e.g. major connections in and out of campus).

This report focuses specifically on wellbeing from a student perspective, the largest population at UBC with 39,984 undergraduates and 9,912 graduate students located at the UBC Vancouver campus. For students, being healthy is central to being able to attain academic success and having a positive learning experience.

2.0 Background and Context

Student wellbeing is instrumental to the success of students’ lives and their academic performance. It is particularly important in the context of post-secondary education, where the majority of students are entering a major stage in their life course and personal development. This report follows the framework developed by the Canadian Association of College and University Student Services (CACUSS) and the Canadian Mental Health Association (CMHA) for addressing student health in post-secondary institutions.

Executive Summary

3.0 Methodology

Primary and secondary research was conducted in the preparation of this report using two primary methods. First, a literature review was conducted to gain an understanding of how built and natural environment factors affect student learning experiences and wellbeing.

Second, a survey was administered to UBC students in order to better understand their perceptions of the impact of the campus environment on their personal wellbeing and learning experiences.

4.0 Student Survey Results

In total, ninety (90) survey responses were received. Of the students who responded, 34.1% were classified as current undergraduate students and 64.8% were graduate students. One respondent was an alumnus (1.1%). Out of the 90 responses, 89 (98.9%) were students at the UBC Vancouver campus, while one (1.1%) was a student at the Okanagan campus. 48.8% of respondents identified as male with 51.2% identifying as female. 88.9% of respondents are estimated to be living off-campus who have to commute to UBC, while 11.1% are estimated to be living on-campus.

While the respondents do not form a representative sample of the student population, the overall sentiment expressed by survey respondents match the expectations and experience of the authors.

5.0 Best Practices and Recommendations

Recommendations are presented for the four environments below.

Formal Learning Spaces (FLS):

- FLS 1: Include in the CoursEval system questions regarding the quality of the classroom for systematic data collection and monitoring across the campus.
- FLS 2: Require construction to provide acoustic barriers when working directly adjacent to classrooms.
- FLS 3: Provide windows and openings for natural light whenever possible in architectural design; otherwise require LED or full-spectrum lighting in indoor design guidelines.
- FLS 4: Provide a simple means for students and faculty to report rooms with comfort issues.

Executive Summary

Informal Learning Spaces (ILS):

- ILS 1: Reduce overcrowding in study spaces by allocating more floor space to informal study spaces in new development, and by retrofitting existing buildings where possible.
- ILS 2: Expand the number of buildings that are open 24/7 hours, particularly during exam periods.
- ILS 3: Review design guidelines to ensure that informal learning spaces have an adequate supply of power outlets, particularly in spaces frequented by undergraduate students.
- ILS 4: Introduce more food services on campus that offer reasonably priced and healthy food options.
- ILS 5: Improve the aesthetic quality of informal learning spaces by incorporating artwork and plants.
- ILS 6: Explore creative concepts for introducing opportunities for physical activity and relaxation in informal study spaces.

Campus Public Realm (CPR):

- CPR 1: Develop a resource guide listing outdoor public spaces available on campus.
- CPR 2: Expand rain protection design guidelines to include public realm projects when feasible to improve user comfort and use.
- CPR 3: Identify heating strategies to increase user comfort and use of public spaces during cold temperatures.
- CPR 4: Adopt a standards-based approach for green space to assess deficiencies.
- CPR 5: Continue to develop and implement creative public space activation strategies.
- CPR 6: Improve wayfinding for construction detours.
- CPR 7: Conduct a market demand analysis for outdoor meditation spaces.
- CPR 8: Conduct a market feasibility study for a UBC food truck program.

Surrounding Community Environment (SCE):

- BCE 1: Work with TransLink to increase bus service and frequency to UBC in order to avoid crowding.
- BCE 2: Work with the Ministry of Transportation and Infrastructure to create separated bicycle paths on major routes in and out of campus with improved end-of-trip facilities.
- BCE 3: Work with the Ministry of Transportation and Infrastructure to improve nighttime lighting along bicycle paths in and out of campus.

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Preface and Acknowledgements

This document is part of a series of four reports prepared by students in Planning, Population and Public Health, and Civil Engineering for the Wellbeing Initiative as part of the course *PLAN 579/SPPH 571: Public Health, Transportation, and the Built Environment* (Winter 2014 Semester) taught by Dr. Lawrence Frank.

The four reports prepared research on the physical campus environment in relation to health and wellbeing from the perspectives of:

- Students;
- Faculty;
- Staff;
- Residents.

The research was supported by the SEEDS (Social Ecological Economic Development Studies) Program at UBC, an initiative that provides opportunities for students to work collaboratively with faculty and staff to advance sustainability in campus operations as part of UBC as a Living Laboratory.

The authors would like to thank the following staff at UBC for their assistance and support:

- **Patty Hambler**, Student Development and Services;
- **Carole Jolly**, Campus + Community Planning;
- **Matt Dolf**, Wellbeing Initiative;
- **Miranda Massie and Colin Hearne**, Human Resources.

Author Biographies

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Blair Underhill is a first year Master's student at the UBC School of Community and Regional Planning with a focus on transportation planning. His background includes a B.Sc. in Geography from UVic and over 5 years of experience in municipal and regional GIS services.

1.0 Introduction

UBC is currently developing the Wellbeing Initiative to promote the wellbeing, health, and social sustainability of its students, faculty, staff, and area residents as part of a joint Vancouver and Okanagan campus collaboration. The Initiative has the mandate to “advance human and ecological wellbeing at both campuses through engaging and building community, stimulating student learning and success, supporting faculty and staff development, and furthering research excellence.”

The Wellbeing Steering Committee, comprising of administrative, academic, staff, and student representatives from across UBC, have identified the need to better develop the connection between the built and natural environments of the campus to health as part of the Initiative. Students in *PLAN 579/SPPH 571: Public Health, Transportation, and the Built Environment* taught by Dr. Lawrence Frank in the Schools of Community and Regional Planning & Population and Public Health were retained to conduct research on how the following physical campus environments can be better designed from a health perspective:

- Formal learning spaces (e.g. classrooms);
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- Campus public realm (e.g. open spaces);
- Surrounding community environment (e.g. major connections in and out of campus).

This report focuses specifically on wellbeing from a student perspective, the largest population at UBC with 39,984 undergraduates and 9,912 graduate students located at the UBC Vancouver campus. For students, being healthy is central to being able to attain academic success and having a positive learning experience.

The purpose of this research will help guide planning and programmatic and capital investment on campus targeted towards students in support of the Wellbeing Initiative. The output of the research are a series of recommendations, guidelines, and criteria for wellbeing based on primary and secondary research.

The findings presented in this report will be of particular interest to the following units at UBC:

- **Office of the Vice President, Students:** responsible for shaping the student experience and learning environment for undergraduate and graduate students;
- **Student Development & Services:** responsible for creating an engaging and inclusive learning environment for students, including facilitating enriched educational opportunities and providing Counselling and Health Services to help promote mental and physical health;
- **Campus + Community Planning:** responsible for creating the physical environment at UBC, with key responsibilities in long-range planning, land use regulations, campus and landscape design, sustainability initiatives, transportation, and community-building activities;
- **Facilities Planning (Infrastructure Development):** responsible for providing planning services to support and accommodate academic and research growth and change with regard to new buildings, renovations, relocations, and space adjustment.

2.0 Background and Context

2.1 Student Wellbeing in Canadian Postsecondary Institutions

Student wellbeing is instrumental to the success of students' lives and their academic performance. It is particularly important in the context of post-secondary education, where the majority of students are entering a major stage in their life course and personal development.

Wellbeing is defined as the presence of positive emotions and moods, the absence of negative emotions, satisfaction with life, fulfillment, and positive functioning (US Centers for Disease Control and Prevention, 2013). As a result, wellbeing is understood as part of a larger, holistic concept of health where “health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (World Health Organization, 2014).

For the purposes of this report, the concept of wellbeing encompasses the following dimensions:

- Mental health (e.g. stress, mental illness, work life balance);
- Physical health (e.g. physical activity, nutrition);
- Social health (e.g. sense of community and belonging).

This report follows the framework developed by the Canadian Association of College and University Student Services (CACUSS) and the Canadian Mental Health Association (CMHA) for addressing student mental health in post-secondary institutions (see Figure 1).

Research has identified that the quality of physical and social environments on campuses can significantly affect mental health and wellbeing for students. As a result, campus planners, architects, landscape architects, urban designers, public health specialists, and university administrators can play a significant role in shaping the environmental determinants of health in order to better promote health and wellbeing for students at the population level as a form of preventive healthcare.

To that end, this report is aligned with and addresses the “Supportive, Inclusive Campus Climate and Environment” component of the CACUSS and CMHA framework. Some key considerations identified in the framework include:

- What is the impact of current campus learning, living, and social space on student learning and wellbeing? To what degree do these spaces reinforce behaviors that promote or undermine learning and mental health? Is there adequate quality learning, living, and social space?
- How does the physical design of campus (e.g. transportation, lighting) impact student safety?
- How does the geographic location as well as socio-, economic and political characteristics of the surrounding community impact student mental health? What programs and resources might be needed to address these impacts?

2.0 Background and Context

- What are campus departments doing to foster the development of a supportive campus community?

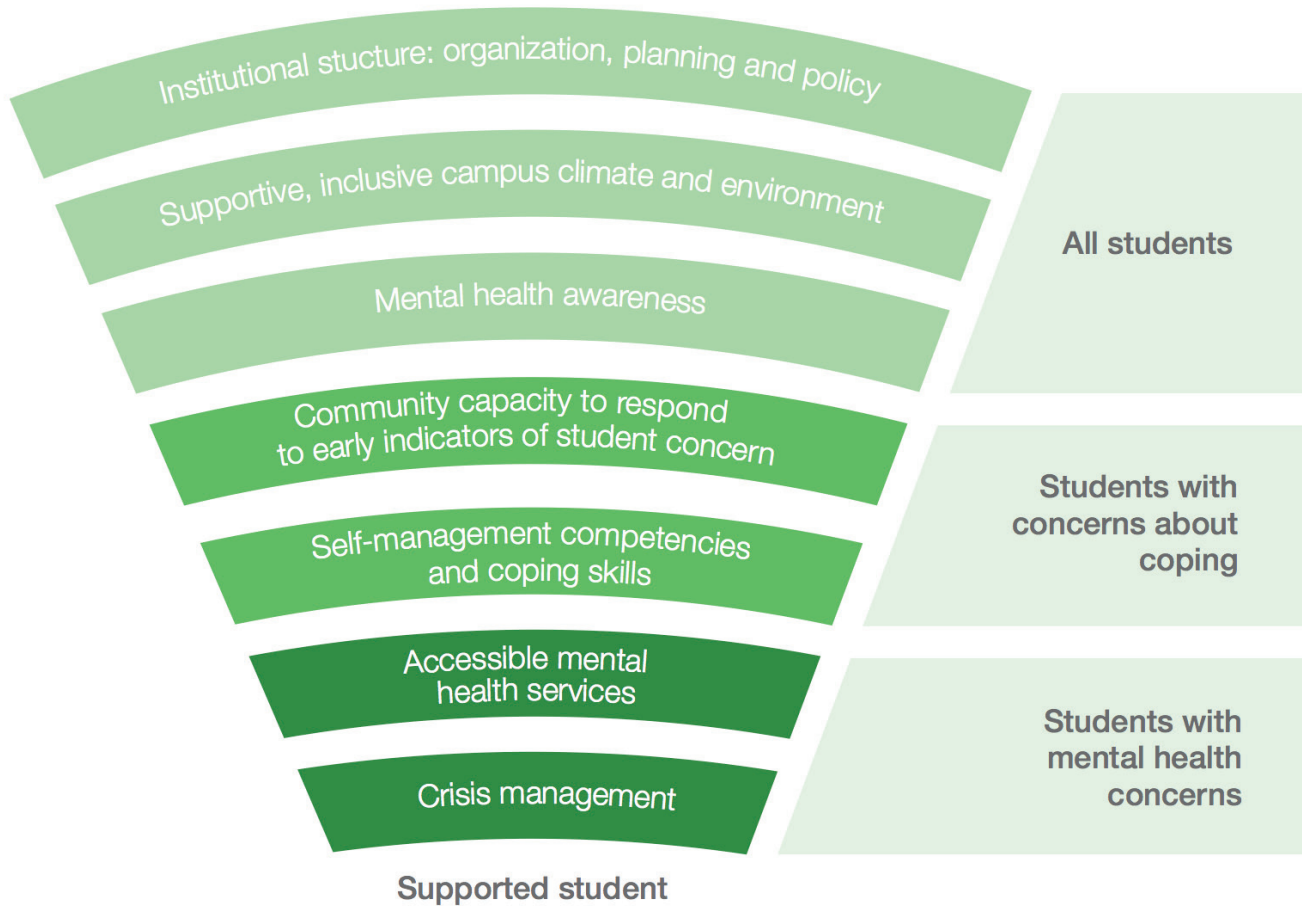


Figure 1. Framework for post-secondary student mental health.

Source: Canadian Association of College & University Student Services and Canadian Mental Health Association, 2013.

2.0 Background and Context

2.2 UBC Strategic Plans, Policies, and Guidelines

Promoting wellbeing for students in relation to the physical campus environment is directly aligned with and will help achieve UBC's strategic goals. Key plans, policies, and guidelines include:

Place and Promise:

UBC's key strategic plan outlining the University's core commitments in student learning, research excellence, and community engagement.

- Student Learning Goal 4: Support student well-being, personal development and outstanding campus life.

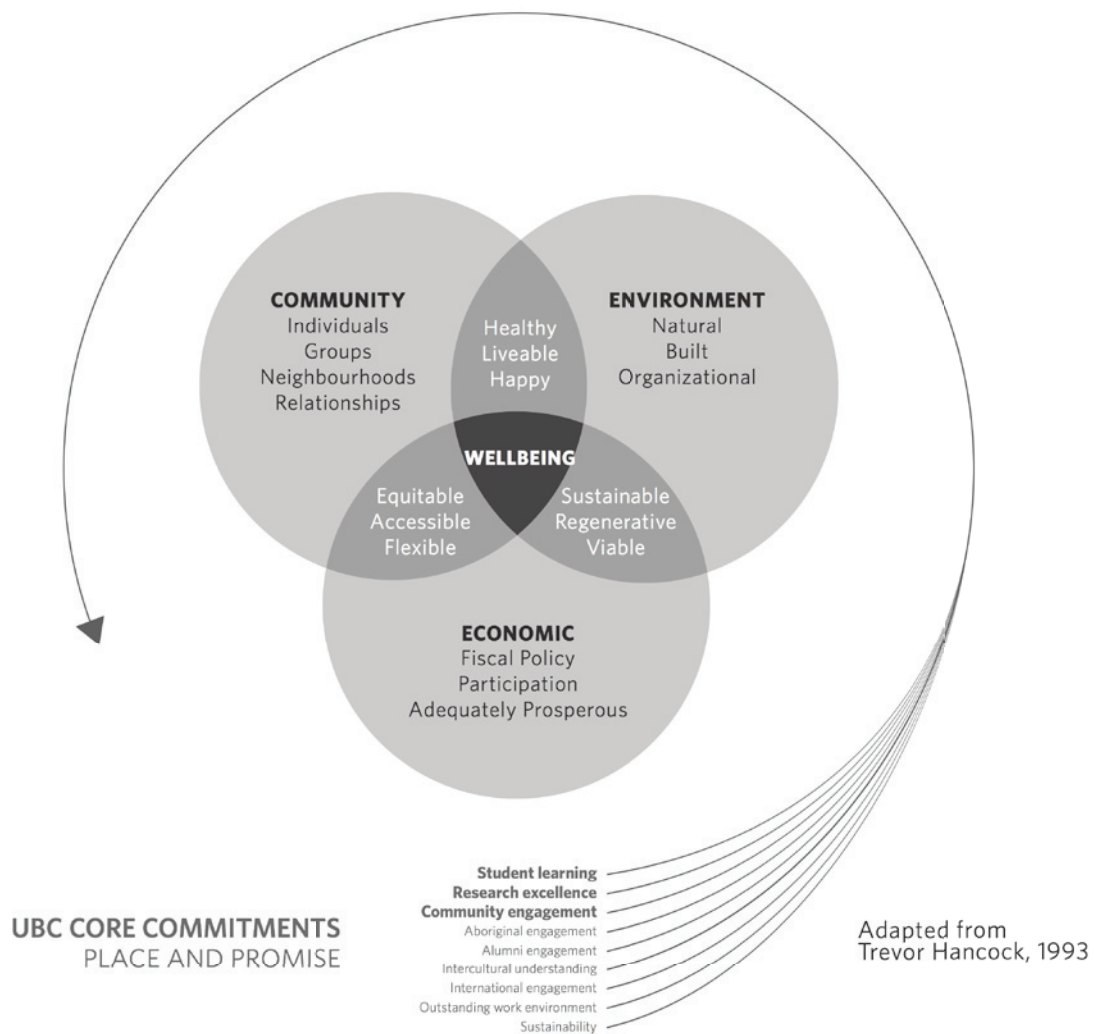


Figure 2. UBC Place and Promise's alignment with wellbeing. Source: UBC Wellbeing Initiative.

2.0 Background and Context

Mental Health and Wellbeing Strategy:

UBC's strategy to support and enhance student mental health and wellbeing.

- **Supportive Environment:** Create a campus environment that supports meaningful student engagement and connection to the campus community.

20-Year Sustainability Strategy:

UBC's strategy to achieve its sustainability vision and aspirations towards a more sustainable university.

- **Goal 2:** Integration of social sustainability demonstrates improvements in health, productivity and quality of life of the UBC community.
- **Goal 3:** Innovative engagement programs strengthen linkages across the campus to generate a sense of place and support the creation of a vibrant, animated, and sustainable live-work-learn community.
- **Goal 4:** UBC is a universally accessible and automobile-restrained community and is a leader in utilizing alternative modes of transportation.

Vancouver Campus Plan:

UBC's framework for the campus' current and future development that contains principles, policies and strategies for growth and development.

- **Strategy 1:** Create a sustainable campus.
- **Strategy 3:** Nurture a more vibrant and interesting campus for UBC's community of scholars.
- **Strategy 4:** Rediscover UBC's sense of place and natural west coast beauty.
- **Strategy 5:** Ensure a well-connected and accessible campus.

Public Realm Plan:

UBC's plan for investment in the outdoor public spaces of the campus' academic core.

Transportation Plan:

UBC's plan for the direction of transportation goals, policies and projects on campus.

- W1: Walking Network
- W2: Public Realm
- C1: Cycling Network
- T1: Transit Network

Learning Space Design Guidelines:

UBC's guidelines for the planning and design of formal and informal learning spaces on campus.

3.0 Methodology

Primary and secondary research was conducted in the preparation of this report.

3.1 Literature Review

A literature review was conducted to gain an understanding of how built and natural environment factors affect the wellbeing of students and their learning experience. Relevant articles were retrieved from databases such as Google Scholar, ScienceDirect, PubMed, and JSTOR. Articles were further identified by viewing the reference list of studies deemed pertinent to this report.

The evidence base was used to help form recommendations for modifying built and natural environment factors at UBC to improve student wellbeing and their learning experience.

3.2 Student Survey

A survey was administered to UBC students in order to better understand their perceptions of the impact of the campus environment on their personal wellbeing and learning experiences (see Appendix A for the survey questionnaire).

A total of 15 questions were asked in the survey, including five-point Likert scale questions asking students to rate aspects of campus spaces, and open-ended response questions asking students for suggestions for improvement. Students were also asked to indicate their gender and student status at UBC.

The survey platform FluidSurvey was used to host and disseminate the questionnaire. The questionnaire was distributed mainly through the personal networks of the authors using the following online channels:

- UBC Reddit community webpage (social news website);
- School of Community and Regional Planning student listserv;
- Master of Occupational and Environment Hygiene student listserv;
- Department of Engineering student listserv;
- Geography Students' Association Facebook group;
- Green College Residence listserv;
- Alumni of the Bachelor of Education program;
- UBC Men's Ultimate Frisbee Team.

As the survey was only sent through select distribution channels, the respondents are not representative of the UBC student body. Particularly, selection bias was a major limitation of the survey, as the majority of survey respondents were graduate students.

4.0 Student Survey Results

In total, ninety (90) survey responses were received.

Descriptive statistics for quantitative questions are presented in this section. Difference of means tests (t-test) were conducted at the 95% confidence level to identify any statistically significant differences in responses between undergraduate and graduate students. When significant, the results are presented in separate tables. Qualitative responses for the open-ended questions are found in Appendix B.

The respondents do not form a representative sample of the student population across all the faculties, schools, and departments at the UBC Vancouver campus. However, the overall sentiment expressed by the survey respondents match the expectations and experience of the authors. Three of the authors completed their undergraduate degrees at UBC and have spent a total of six to seven years on campus.

Of the students who responded, 34.1% were classified as current undergraduate students and 64.8% were graduate students. One respondent was an alumnus (1.1%). Out of the 90 responses, 89 (98.9%) were students at the UBC Vancouver campus, while one (1.1%) was a student at the Okanagan campus. 48.8% of respondents identified as male with 51.2% identifying as female. 88.9% of respondents are estimated to be living off-campus who have to commute to UBC, while 11.1% are estimated to be living on-campus.

4.1 Formal Learning Spaces

Table 1. Aspects of formal learning spaces that negatively affect student wellbeing and learning.

Q1: The following aspects of formal learning spaces have negatively affected my wellbeing and learning experience.								
Formal Learning Space Aspect	Mean	SD	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	<i>n</i>
Construction-related noise	3.7	1.0	2 (2.2%)	12 (13.3%)	17 (18.9%)	38 (42.2%)	21 (23.3%)	90
Lack of natural lighting	3.7	1.1	4 (4.5%)	11 (12.4%)	17 (19.1%)	37 (41.6%)	20 (22.5%)	89
Lack of windows	3.6	1.0	3 (3.3%)	12 (13.3%)	16 (17.8%)	42 (46.7%)	17 (18.9%)	90
Uncomfortable temperature	3.6	1.2	3 (3.4%)	17 (19.1%)	21 (23.6%)	22 (24.7%)	26 (29.2%)	89
Uncomfortable furniture	3.5	1.2	5 (5.6%)	19 (21.1%)	15 (16.7%)	28 (31.1%)	23 (25.6%)	90
Overcrowded classroom	3.4	1.3	10 (11.1%)	15 (16.7%)	14 (15.6%)	33 (36.7%)	18 (20.0%)	90
Other noise outside the classroom	3.3	1.0	2 (2.2%)	20 (22.2%)	28 (31.1%)	31 (34.4%)	9 (10.0%)	90
Poor aesthetics (e.g. colour, artwork, plants)	3.2	1.2	7 (7.9%)	24 (27.0%)	20 (22.5%)	24 (27.0%)	14 (15.7%)	89
Poor lighting	3.1	1.2	7 (7.9%)	25 (28.1%)	19 (21.3%)	25 (28.1%)	13 (14.6%)	89
Large class size	3.1	1.2	8 (8.9%)	23 (25.6%)	26 (28.9%)	21 (23.3%)	12 (13.3%)	90
Poor classroom acoustics	3.1	1.0	4 (4.5%)	25 (28.1%)	30 (33.7%)	22 (24.7%)	8 (9.0%)	89
Poor air quality	3.0	1.3	10 (11.1%)	25 (27.8%)	22 (24.4%)	18 (20.0%)	15 (16.7%)	90
Poor visibility	3.0	1.1	7 (7.8%)	25 (27.8%)	29 (32.2%)	18 (20.0%)	11 (12.2%)	90

Note: 1 = strongly disagree; 5 = strongly agree. The higher the mean, the more it negatively affects student wellbeing and learning. Results show number of responses with the row percentage in parenthesis.

4.0 Student Survey Results

Table 2. Aspects of formal learning spaces that negatively affect student wellbeing and learning. Item responses with a statistical difference between undergraduate and graduate students at the 95% confidence level.

Q1: The following aspects of formal learning spaces have negatively affected my wellbeing and learning experience.

Formal Learning Space Aspect	Mean	SD	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	<i>n</i>
Large class size (undergraduate)	3.6	1.2	2 (6.7%)	4 (13.3%)	7 (23.3%)	8 (26.7%)	9 (30.0%)	30
Large class size (graduate)	2.8	1.0	5 (8.8%)	19 (33.3%)	18 (31.6%)	12 (21.1%)	3 (5.3%)	57

Note: 1 = strongly disagree; 5 = strongly agree. The higher the mean, the more it negatively affects student wellbeing and learning. Results show number of responses with the row percentage in parenthesis.

4.2 Informal Learning Spaces

Table 3. Aspects of informal learning spaces that negatively affect student wellbeing and learning.

Q3: The following aspects of informal learning spaces have negatively affected my wellbeing and learning experience.

Informal Learning Space Aspect	Mean	SD	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	<i>n</i>
Overcrowded	3.9	1.2	4 (4.4%)	11 (12.2%)	10 (11.1%)	34 (37.8%)	31 (34.4%)	90
Lack of power outlets	3.9	1.0	1 (1.1%)	10 (11.2%)	15 (16.9%)	38 (42.7%)	25 (28.1%)	89
Construction-related noise	3.5	1.1	2 (2.2%)	19 (21.1%)	16 (17.8%)	37 (41.1%)	16 (17.8%)	90
Uncomfortable furniture	3.5	1.1	5 (5.6%)	14 (15.7%)	19 (21.3%)	35 (39.3%)	16 (18.0%)	89
Lack of natural lighting	3.4	1.1	4 (4.5%)	17 (19.1%)	22 (24.7%)	31 (34.8%)	15 (16.9%)	89
Lack of windows	3.4	1.1	6 (6.8%)	16 (18.2%)	19 (21.6%)	35 (39.8%)	12 (13.6%)	88
Other noise outside the space	3.2	1.1	3 (3.3%)	25 (27.8%)	21 (23.3%)	31 (34.4%)	10 (11.1%)	90
Poor lighting	3.2	1.1	4 (4.5%)	24 (27.3%)	25 (28.4%)	25 (28.4%)	10 (11.4%)	88
Uncomfortable temperature	3.1	1.1	4 (4.5%)	24 (27.0%)	29 (32.6%)	22 (24.7%)	10 (11.2%)	89
Poor aesthetics (e.g. colour, artwork, plants)	3.0	1.2	9 (10.5%)	23 (26.7%)	23 (26.7%)	22 (25.6%)	9 (10.5%)	86
Poor air quality	2.9	1.2	10 (11.4%)	28 (31.8%)	25 (28.4%)	15 (17.0%)	10 (11.4%)	88

Note: 1 = strongly disagree; 5 = strongly agree. The higher the mean, the more it negatively affects student wellbeing and learning. Results show number of responses with the row percentage in parenthesis.

4.0 Student Survey Results

Table 4. Aspects of informal learning spaces that negatively affect student wellbeing and learning.

Q4: The following aspects of informal learning spaces have negatively affected my wellbeing and learning experience.								
Informal Learning Space Aspect	Mean	SD	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	n
Unaffordable food and drink options	3.9	1.1	3 (3.4%)	9 (10.1%)	16 (18.0%)	26 (29.2%)	35 (39.3%)	89
Low availability of private study spaces	3.8	1.1	3 (3.4%)	9 (10.1%)	15 (16.9%)	34 (38.2%)	28 (31.5%)	89
Low availability of group study spaces	3.5	1.1	3 (3.4%)	11 (12.4%)	31 (34.8%)	23 (25.8%)	21 (23.6%)	89
Low availability of dining and coffee spaces	3.4	1.2	4 (4.5%)	22 (24.7%)	15 (16.9%)	30 (33.7%)	18 (20.2%)	89
Short hours of operation for informal spaces	3.4	1.2	4 (4.5%)	21 (23.6%)	19 (21.3%)	28 (31.5%)	17 (19.1%)	89
Low availability of amenities (e.g. microwaves, sinks)	3.2	1.1	5 (5.6%)	22 (24.7%)	26 (29.2%)	24 (27.0%)	12 (13.5%)	89
Low availability of social spaces	3.1	1.2	7 (8.0%)	24 (27.3%)	20 (22.7%)	24 (27.3%)	13 (14.8%)	88

Note: 1 = strongly disagree; 5 = strongly agree. The higher the mean, the more it negatively affects student wellbeing and learning. Results show number of responses with the row percentage in parenthesis.

Table 5. Aspects of informal learning spaces that negatively affect student wellbeing and learning. Item responses with a statistical difference between undergraduate and graduate students at the 95% confidence level.

Q3/Q4: The following aspects of informal learning spaces have negatively affected my wellbeing and learning experience.								
Informal Learning Space Aspect	Mean	SD	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	n
Lack of power outlets (undergraduate)	4.2	0.9	0 (0.0%)	2 (6.7%)	3 (10.0%)	12 (40.0%)	13 (43.3%)	30
Lack of power outlets (graduate)	3.7	1.0	0 (0.0%)	8 (14.3%)	12 (21.4%)	24 (42.9%)	12 (21.4%)	56
Unaffordable food and drink options (undergraduate)	4.3	1.1	1 (3.3%)	2 (6.7%)	3 (10.0%)	6 (20.0%)	18 (60.0%)	30
Unaffordable food and drink options (graduate)	3.8	1.1	1 (1.8%)	7 (12.5%)	13 (23.2%)	18 (32.1%)	17 (30.3%)	56

Note: 1 = strongly disagree; 5 = strongly agree. The higher the mean, the more it negatively affects student wellbeing and learning. Results show number of responses with the row percentage in parenthesis.

4.0 Student Survey Results

4.3 Campus Public Realm



Figure 3. Word cloud of favourite public spaces.

Table 6. Favourite public spaces on campus.

Q6: List your top three favourite public spaces on campus you enjoy using.			
Public Space	Responses	Public Space	Responses
Rose Garden	21	Thunderbird Park	2
Main Mall	14	University Boulevard Stormwater Terraces	2
Nitobe Memorial Garden	9	Asian Centre Garden	1
Open Space behind MoA	5	Fairview Square	1
Wreck Beach	5	Foreshore Trial	1
Library Commons	4	Forest behind West Mall Annex	1
Forest by Asian Centre/C.K. Choi Building	3	Grassy Knoll	1
Forested Areas	3	Hennings Plaza	1
Janice Swings	3	Open Space by Clock Tower	1
Pedestrian Pathways	3	Orchard Garden	1
Bookstore Plaza	2	Park by UBC Village	1
Buchanan Courtyard	2	Open Space by Beaty Biodiversity Museum	1
Flagpole Plaza	2	Pedestrian and Bike Pathways	1
IKBLC Plaza	2	Pop Rocks	1
Koerner Library Plaza	2	Sacred Circle by First Nations Longhouse	1
Martha Piper Plaza	2	SUB Roof Courtyard	1
McInnes Field	2	UBC Farm	1
SPPH Harvest Table	2	University Boulevard	1
Pacific Spirit Park	2	Upside-down Tree	1
Soccer Fields	2	Varsity Fields	1

Note: n = 75. See Appendix B for list of raw responses.

4.0 Student Survey Results

Table 7. Reasons for public space use.

Q7: Check the following reasons why you use public spaces on campus.

Public Space Use	Responses	Percentage
Hanging out with friends	61	69.3%
Studying	54	61.4%
Relaxation	47	53.4%
Appreciating the view(s)	47	53.4%
Exercising (e.g. jogging)	26	29.5%
Play and fun	24	27.3%
Other	13	14.8%
Meeting new people	9	10.2%
Mediation	8	9.1%

Note: $n = 88$. See Appendix B for list of “Other” responses.

Table 8. Preferences for types of activities and programs in public space.

Q8: Indicate the following activities or programs that you would like to see more of in public spaces on campus.

Public Space Activation	Responses	Percentage
Tables and movable chairs	55	63.2%
Outdoor events or festivals	44	50.6%
Outdoor markets	43	49.4%
Public art installations	40	46.0%
Creative temporary seatings	36	41.4%
Food trucks	35	40.2%
Performances (e.g. music)	32	36.8%
Sports events	17	19.5%
Other	9	10.3%

Note: $n = 87$. See Appendix B for list of “Other” responses.

Table 9. Preferences for types of activities and programs in public space. Item responses with a statistical difference between undergraduate and graduate students at the 95% confidence level.

Q8: Indicate the following activities or programs that you would like to see more of in public spaces on campus.

Public Space Activation	Percentage	n
Food trucks (undergraduate)	24.1%	29
Food trucks (graduate)	47.3%	55

4.0 Student Survey Results

4.4 Surrounding Community Environment

Table 10. Mode of transportation for commuting.

Q10: What mode(s) of transport do you use to commute to UBC?		
Mode	Responses	Percentage
Bus	68	85.0%
Bike	21	26.3%
Car	18	22.5%
Walk	13	16.3%

Note: $n = 80$. Respondents could pick more than one mode.

Table 11. Stressful aspects of commute.

Q11: What aspect(s) of your commute to UBC do you find stressful?		
Commute Aspect	Responses	Percentage
Crowded transit	54	70.1%
Full buses passing you	46	59.7%
Commute time and distance	45	58.4%
Weather	37	48.1%
Congested traffic	29	37.7%
High parking fees	20	26.0%
Poor lighting	15	19.5%
Fear of bike theft	14	18.2%
Lack of bike storage	14	18.2%
Lack of parking	10	13.0%
Personal safety	10	13.0%
Other	10	13.0%

Note: $n = 77$. Respondents could pick more than one mode.

4.0 Student Survey Results

Table 12. Stressful aspects of commute (bus users).

Q11: What aspect(s) of your commute to UBC do you find stressful?		
Commute Aspect	Responses	Percentage
Crowded transit	51	75.0%
Full buses passing you	45	66.2%
Commute time and distance	41	60.3%
Weather	33	48.5%
Congested traffic	25	36.8%
High parking fees	17	25.0%
Fear of bike theft	13	19.1%
Lack of bike storage	13	19.1%
Poor lighting	13	19.1%
Lack of parking	8	11.8%
Personal safety	8	11.8%

Note: $n = 68$. Respondents could pick more than one mode.

Table 14. Stressful aspects of commute (car users).

Q11: What aspect(s) of your commute to UBC do you find stressful?		
Commute Aspect	Responses	Percentage
High parking fees	13	72.2%
Commute time and distance	12	66.7%
Crowded transit	12	66.7%
Congested traffic	12	66.7%
Full buses passing you	10	55.6%
Lack of parking	7	38.9%
Weather	7	38.9%
Poor lighting	6	33.3%
Personal safety	3	16.7%
Fear of bike theft	1	5.6%
Lack of bike storage	1	5.6%

Note: $n = 18$. Respondents could pick more than one mode.

Table 13. Stressful aspects of commute (bike users).

Q11: What aspect(s) of your commute to UBC do you find stressful?		
Commute Aspect	Responses	Percentage
Weather	15	71.4%
Crowded transit	13	61.9%
Full buses passing you	12	57.1%
Lack of bike storage	11	52.4%
Commute time and distance	9	42.9%
Fear of bike theft	9	42.9%
Congested traffic	7	33.3%
Poor lighting	7	33.3%
Personal safety	5	23.8%
High parking fees	2	9.5%
Lack of parking	1	4.8%

Note: $n = 21$. Respondents could pick more than one mode.

Table 15. Stressful aspects of commute (walk users).

Q11: What aspect(s) of your commute to UBC do you find stressful?		
Commute Aspect	Responses	Percentage
Crowded transit	9	81.8%
Full buses passing you	7	63.6%
Weather	6	54.5%
Commute time and distance	5	45.5%
Lack of bike storage	4	36.4%
Fear of bike theft	3	27.3%
Congested traffic	2	18.2%
High parking fees	1	9.1%
Personal safety	1	9.1%
Poor lighting	1	9.1%
Lack of parking	0	0.0%

Note: $n = 11$. Respondents could pick more than one mode.

4.0 Student Survey Results

Table 16. Stressful aspects of commute. Item responses with a statistical difference between undergraduate and graduate students at the 95% confidence level.

Q11: What aspect(s) of your commute to UBC do you find stressful?

Commute Aspect	Percentage	<i>n</i>
Full buses passing you (undergraduate)	77.8%	27
Full buses passing you (graduate)	49.0%	49
High parking fees (undergraduate)	33.3%	27
High parking fees (graduate)	22.5%	49

Table 17. Potential mode share increase through improvements in transportation infrastructure.

Q12: Improvements in infrastructure and service for the following modes of transportation would encourage you to use that mode more to commute to UBC.

Mode	Mean	<i>SD</i>	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	<i>n</i>
Transit	4.3	0.8	0 (0.0%)	1 (1.3%)	13 (17.3%)	23 (30.7%)	38 (50.7%)	75
Bike	3.6	1.3	7 (9.6%)	7 (9.6%)	15 (20.5%)	21 (28.8%)	23 (31.5%)	73
Walk	2.9	1.2	10 (13.9%)	14 (19.4%)	30 (41.7%)	10 (13.9%)	8 (11.1%)	72

Note: 1 = strongly disagree; 5 = strongly agree. The higher the mean, the more improvements would encourage the use of that mode. Results show number of responses with the row percentage in parenthesis.

5.0 Best Practices and Recommendations

This section is divided into five sub-sections: a description of the space, a review of the academic literature, description of the survey results, recommendations, and a case study.

5.1 Formal Learning Spaces (FLS)

5.1.1 Description

University students can expect to spend approximately 16 hours per week in formal learning environments (University of Oregon Admissions, 2014). During this time in class, students must be able to concentrate effectively if they are to be successful in their studies. A typical lecture environment requires students to listen to the lecturer's presentation, read the text and observe images presented on the screen, and record their own personal notes of the lecture. The physical properties of the formal learning space must be designed to facilitate these tasks.

The primary physical considerations of formal learning environments include light levels, temperature, air quality, furniture, and inclusivity. Inclusivity encompasses the accessibility of physical spaces to people of different physical needs. In addition, colour, art, and natural elements present in a space can play a role in student's wellbeing and learning experiences.

At UBC, formal learning spaces include classrooms (general purpose spaces that are centrally scheduled and accessible to all campus users) and teaching labs, typically assigned to a specific department, discipline, or program. The classroom typology at UBC includes:

- Tiered large group;
- Case-style;
- Open design general purpose;
- Small group;
- Studio lab;
- Video-conferencing/AV capture enabled.

5.1.2 Literature Review

Academic Performance

Academic performance is a major cause of stress for university students. In a study of 374 undergraduate students at Franciscan University in Ohio, researchers attempted to determine the factors that led to low mental wellbeing (Beiter et al., 2015). More than 40% of students surveyed reported academic performance to be an extreme source of depression, anxiety, and stress.

In light of academic performance's significant effect on student wellbeing, the learning environment then

5.0 Best Practices and Recommendations

can play a role in mental health outcomes. The formal learning environment is the primary venue for information transfer from professor to student and knowledge creation. Any barriers students face when absorbing and/or constructing knowledge can directly contribute to stress and low mental wellbeing.

Noise

The effect of noise and other external stimuli on students learning abilities have been shown to be detrimental (Marchand et al., 2014). Moreover, the detrimental effects are higher when students are learning through listening, as opposed to learning through reading. Considering that formal learning environments require a significant amount of listening, noise considerations take a high priority in lecture halls.

In the Marchand et al. (2014) study, participants were subjected to a classroom experience. One group performed learning by reading, while the other learning by listening. For each learning type, the light, ambient sound, and temperature levels were adjusted to be in a comfort zone for one group, and outside of the comfort zone for the other group. Results found that the learning by listening group was significantly more negatively affected by conditions outside of their comfort zone than the learning by reading group.

In addition, participants found that talking was a more distracting form of outside noise than ambient noise. This result indicates that preventing hallway conversations from entering the classroom may be more important than mitigating ambient noise such as traffic.

Lighting

Many learning environments, both at UBC and other educational institutions, are lit using fluorescent lights due to their high efficiency and cost-effectiveness. However, fluorescent bulbs function by flickering at extremely fast rates, leading to appearance of continuous light. This high frequency flickering can cause headaches and impair visual performance for some students (Winterbottom & Wilkins, 2009). Research has found that elementary school students in classrooms with only artificial lighting experienced disturbances in their body's regulation of hormone production (Küller et al., 1992). The authors conclude that the lack of natural daylight may upset basic hormone patterns, which can in turn affect the student's ability to concentrate. Natural light is the preferred lighting source in the classroom.

Johnston County in North Carolina, US, compared student performance between naturally lit and artificially lit public schools (Nicklas & Bailey, 1997). Students in the naturally lit schools were found to have higher math and reading achievement scores. Researchers also compared the performance of students who attended an artificially lit school that was torn down and replaced with a new naturally lit school. Results from the new naturally lit building found substantial improvement in test scores.

Temperature

In one study, the performance of elementary students completing logical, mathematics-based, and language-based tasks were evaluated in classrooms both before and after moderating the temperature and increasing ventilation rates (Wargocki & Wyon (2007). Student performance increased when the temperature was reduced from 25 degrees, or above, to approximately 20 degrees. Similarly, increasing the ventilation

5.0 Best Practices and Recommendations

rate was also observed to increase students' cognitive performance. Unsurprisingly, erratic or extreme temperatures, and stuffy or odorous air were negatively correlated with perceptions of the classroom.

Spatial Attributes

Student density inside formal learning environments may impact mental wellbeing. A positive relationship has been established between crowding and psychological distress (Evans, 2003).

Modern post-secondary learning often requires students to have personal laptops, textbooks, and notes available during lectures or tutorials. Many older classrooms and lecture halls at UBC are equipped only with writing surfaces the size of a single sheet of paper. Lack of adequate desk space for each student can lead to a feeling of being crowded.

Yang et al. (2013) provides a detailed study into classroom attributes and their impact on university students' satisfaction and performance. The study found that student perceptions of their learning environment relied heavily on spatial attributes. Visibility of the lecturer and the screen were of high importance. The most significant negative conditions were when sightlines were blocked by other students and from being too far away from the front. Yang et al. suggested that these complaints could be addressed by theater design guidelines that pertain to the slope of the seating area and the overall classroom dimensions.

Furniture

In the Yang et al. (2013) study, in regards to classroom furniture, the most significant element for students was the level of comfort with furniture. In contrast, the number of chairs and desks were the least significant. Respondents reported that the sufficiency of workspace for course tasks was highly correlated with positive perceptions of a classroom.

5.1.3 Survey Results

Students surveyed indicated that construction-related noise was the most significant factor that negatively affected their wellbeing in formal learning environments (ranked first with a mean of 3.7; 65.5% of respondents indicated agree or strongly agree). A lack of natural lighting (mean of 3.7; 64.1%) and a lack of windows (mean of 3.6; 65.6%) were the next highest rated concerns. Comments from survey respondents emphasized that natural light is very important; students complained of poor fluorescent lighting.

Uncomfortable temperature ranked fourth (mean of 3.6). However, it had the highest percentage of respondents that indicated "strongly agree." For students who attend class in a room with poor temperature control, the extreme temperatures can cause a very strong sense of discomfort.

Finding electrical outlets for laptops is an ongoing challenge for modern university students in environments that predate the laptop era. The lecture hall is no exception as a number of students expressed in the survey. Many students choose to bring laptops to class in order to avoid having to print large sets of class notes. The sporadic nature of outlet distribution in many lecture halls and classrooms make getting a power source

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both frustrating and unequitable at times.

Furthermore, several respondents expressed dissatisfaction with the small, personal tables attached to the armrests of chairs in many older lecture halls. Their size is simply inadequate for both a laptop and notepad, which are often both required in modern lectures.

5.1.4 Recommendations

FLS 1: Include in the CoursEval system questions regarding the quality of the classroom for systematic data collection and monitoring across the campus.

End-of-term course evaluations could provide a cost effective and quick means of collecting information from students regarding issues with classrooms. A single entry at the bottom of the course evaluation forms would be sufficient for students to identify concerns that would otherwise go unattended. This can allow identification of hotspot locations, or studies and evaluations on the effects of different formal learning space designs on student learning.

FLS 2: Require construction to provide acoustic barriers when working directly adjacent to classrooms.

Construction noise is a highly significant concern to student wellbeing and learning. Temporary and cost-effective sound barriers could be installed to minimize sound intrusion (see 5.1.5 Case Study). Use of construction site sound barriers are common in situations where noise bylaws must be met. Similar noise bylaws could be enacted on campus to improve the student learning experience.

FLS 3: Provide windows and openings for natural light whenever possible in architectural design; otherwise require LED or full-spectrum lighting in indoor design guidelines.

Poor lighting, especially fluorescent lighting, is a concern of students. Natural light through windows and openings should be pursued whenever possible in the design and retrofit of buildings. Advancements in lighting technology have allowed natural-like light to be provided using cost effective solutions. Full-spectrum Light Emitting Diode (LED) lighting is used as an alternative to sunlight for people suffering from Seasonal Affective Disorder. The cost of LED lighting have reduced dramatically in the past few years, and could provide a way to provide natural-like lighting in classrooms.

In addition, full-spectrum fluorescent lighting (used to grow plants indoors) could also be an alternative. These options will cost more than the traditional fluorescent tubes currently used. However, a cost-benefit analysis factoring in the health benefits for building occupants could provide a strong business case.

FLS 4: Provide a simple means for students and faculty to report rooms with comfort issues.

Many classrooms and lecture halls on campus do not have any means of adjusting the temperature, heating, cooling, and ventilation, which are often controlled by a single building HVAC system. These systems can be outdated and erratic, leading to very uncomfortable temperatures for students. Many students and faculty are unaware of how to address these issues.

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5.1.5 Case Study: Construction Noise Mitigation

Construction noise has been identified as a primary concern for students in formal learning environments. A possible mitigation strategy is to install temporary noise barriers. Noise barriers used alongside busy roads reduce noise levels by between 5 and 10 decibels (db) (All Noise Control, n.d.). A 10 db reduction is a halving of the noise level, so there is potential for considerable noise reductions. For example, a temporary acoustic barrier was used during the Big Dig tunnel construction project in Boston.

In the Civil Engineering and Mechanical Engineering (CEME) building, room 1208 is approximately five meters from a construction site (see Figure 4). A temporary sound barrier wall could be installed in the clear area bordering the site. Figure 5 illustrates the approximately three meter width required for the two concrete highway barriers rows that support the temporary wall. The clear area outside of CEME 1208 classroom wall could adequately accommodate such a setup.



Figure 4. CEME classroom adjacent to construction site.

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Figure 5. Left: rendering of a noise barrier setup for the CEME classroom. Right: section of the noise barrier.
Source: All Noise Control, n.d.

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5.2 Informal Learning Spaces (ILS)

5.2.1 Description

Informal learning spaces are indoor spaces on campus outside of the classroom. Common activities include individual or group study, socializing, working on individual or group projects and assignments, meeting with fellow classmates or instructors, and eating. Considering that many students spend a significant portion of their day on campus, it is essential to ensure that they have access to adequate informal learning spaces that promote positive learning habits and accommodate students' learning preferences. Positive learning habits can enhance mental wellbeing of students. Furthermore, spaces that allow for social interaction and group work can facilitate relationship building, thereby increasing the social capital of the campus.

The primary physical considerations of informal learning environments are lighting, ambient factors (noise, temperature, air quality, etc.), availability of comfortable furniture, power outlet availability, aesthetics, and access to cafés.

At UBC, informal learning spaces are categorized as centralized, distributed, or cafés. Examples include:

- **Centralized:** student lounges, building lobbies, breakout rooms, large areas with individual and/or group study spaces, study spaces in libraries;
- **Distributed:** seating in corridors, benches outside of classrooms, small alcoves in buildings;
- **Cafés:** restaurants, coffee shops.

5.2.2 Literature Review

Cafés and Affordable Food Options

Ibrahim and Fadzil (2013) studied patterns of informal learning space use amongst 225 students at a university campus in Malaysia and found that the most frequently used space were the cafeteria, followed by the library commons area and designated study rooms. Other studies have also established the importance of cafés. At the Olin Library at the University of Washington, Montgomery (2014) noted that the café was very popular amongst the students. However, it offered unappetizing refrigerated carts and there was no seating or tables. Montgomery conducted a student survey to determine what aspects of the library needed to be changed as it was about to undergo renovations. As expected, many students suggested the café be expanded and have longer hours of operation.

Since students use cafés as a space for learning and socializing, it is essential that food outlets on campus also provide healthy and affordable food options. Costly healthy foods options are likely to deter students from making positive dietary choices, particularly since students are often financially burdened. Moreover, numerous studies show that high fruit and vegetable prices are positively associated with obesity (Powell & Bao, 2009). University campuses should be designed to ensure that all students have equal access to cafés

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that offer spaces to study and healthy, affordable food options.

Spatial Attributes

Studies describe the importance of having adequate lighting, furniture, power outlet availability, ambient conditions, and aesthetics in informal learning spaces. Zandvilient (2014) surveyed students' perceptions of the significance of the following design parameters on their learning:

- Physical accommodation;
- Aesthetics;
- Ambient factors (e.g. noise, scent, temperature, daylight);
- Physical layout;
- Lighting.

Students made comments such as “[i]t is good to be in a room that is pretty and it would be nice to have things up on the walls” (p. 23), and “[t]he boardroom was awesome because there was natural light” (p. 24). The students' comments suggest that designers should aim to incorporate colorful artwork and indoor plants in study spaces to improve students' overall attitudes toward the space. The negative comment that a particular study space was like a “windowless cell” (p. 24) also indicates that students value natural lighting in a study space (Zandvilient, 2014).

At the University of California, Berkley, a study found that the East Asian Library was voted one of the top three favorite places on campus because it was a beautiful building with natural lighting, wireless internet, conveniently located power outlets, and low noise levels (Declercq & Cranz, 2014).

Seating and Furniture

According to a student survey performed by Declercq and Cranz (2014), the most common request amongst patrons of the library was increased availability of comfortable furniture, including soft-padded seating and couches. The researchers noticed that most of the comfortable chairs were located on the fourth floor of the building and suggested that the furniture should be placed on the first or second floor to ensure students do not miss it.

Based on the relatively sedentary behavior of students in informal learning spaces, the study also suggested that libraries include a room containing treadmills so that students can walk while they read. Integrating light physical activity in students' learning patterns can help enhance physical and mental health.

5.2.3 Survey Results

The top five informal learning space-related issues that affect students' wellbeing and learning experiences are:

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- Unaffordable food and drink options (ranked first with a mean of 3.9; 68.5% of respondents indicated agree or strongly agree);
- Overcrowding (mean of 3.9; 72.2%);
- Lack of power outlets (mean of 3.9; 70.8%);
- Low availability of private study spaces (mean of 3.8; 69.7%);
- Low availability of group study spaces (mean of 3.5; 49.4%).

Undergraduates were significantly more sensitive to food affordability and power outlet availability compared to graduate students.

When asked how informal learning spaces on campus can be improved, common comments included “[NEED] MORE STUDY SPACES!” and “[t]here is nowhere to study. All the places that are available (libraries and such) are always packed.”

With regard to the lack of affordable food options, students commented on the “[need for] more good, cheap food on campus” and the “[need for] places with healthy food options that don’t cost an arm and a leg.”

5.2.4 Recommendations

ILS 1: Reduce overcrowding in study spaces by allocating more floor space to informal study spaces in new development, and by retrofitting existing buildings where possible.

The majority of students expressed that there is a lack of available informal private and group study spaces, contributing significantly to stress and a negative learning experience. New development should allocate more floor space dedicated to informal study spaces to alleviate capacity issues.

One creative suggestion is for a study space smartphone app integrated into the current UBC app (similar to those provided by car sharing services), and a system that allows students to check in and out of study spaces, regardless if they are bookable or not. This would provide students valuable information on the occupancy status of paces and buildings, and help students avoid making long and/or multiple trips to find available study spaces.

ILS 2: Expand the number of buildings that are open 24/7 hours, particularly during exam periods.

Currently, the Irving K. Barber Learning Centre is the only library that is open 24 hours a day during exam time. Students’ would benefit if more buildings and surrounding cafés were open for longer periods of time.

ILS 3: Review design guidelines to ensure that informal learning spaces have an adequate supply of power outlets, particularly in spaces frequented by undergraduate students.

The lack of power outlets was frequently indicated as an issue by students. In particular, undergraduate students were more sensitive than graduate students to power outlet shortages, as they typically do not have

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access to a designated space like graduate students. Spaces designed to be frequented by undergraduate students should have a high availability of power outlets, particularly in areas of the rooms where there is seating available as they function as informal learning areas.

ILS 4: Introduce more food services on campus that offer reasonably priced and healthy food options. Nearly 60% of survey respondents indicated that food and drink options offered on campus are not affordable. Undergraduates in particular were significantly more price sensitive than graduate students. One suggestion is for produce stands that sell inexpensive fruits and vegetables to be placed in areas with high student traffic. Survey respondents cited Seedlings in Thea Koerner House as a favourite study spot because the food and drink options are reasonably priced.

ILS 5: Improve the aesthetic quality of informal learning spaces by incorporating artwork and plants. Many private and group study spaces are often bare, with a lack of artwork and plants. Research has found these elements assist and boost learning and reduce stress for students. Artwork representing nature and green space in particular should be targeted.

ILS 6: Explore creative concepts for introducing opportunities for physical activity and relaxation in informal study spaces.

As suggested by Declercq and Craz, (2014), UBC can explore creative opportunities to incorporate physical activity options in informal study spaces. For example, a space that offer treadmills with book holders might encourage students to learn while engaging in physical activity simultaneously. Flexible spaces in buildings where students can take a break from studies to practice meditation and yoga can also be incorporated in buildings to facilitate stress relieving activities.

5.2.5 Case Study

Many buildings at UBC have been built using high quality design strategies to promote positive learning experiences and wellbeing for students. These buildings have plenty of natural lighting, comfortable furniture, plants and other aesthetic features, and are located near food outlets. However, there exists disparate conditions for other buildings.

The School of Population and Public Health (SPPH) building offers students study spaces with the above features. The building has small rooms available for group or individual study, and several soft padded benches are placed outside of classrooms. Figure 6 depicts the main lobby of the building. The large windows in the main lobby allow for natural light to filter into the space and create a well lit environment. The furniture is both comfortable and unique, and thus students are often studying or socializing with friends in the lobby. The greenery and artwork also contributes to the aesthetic quality of the space. There is even a sink and microwave behind the large divider where students can prepare their lunch.

However, one feature the lobby lacks are power outlets by the seating, making it difficult to stay there for long periods of time if you intend to work.

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Figure 6. Main lobby in the School of Population and Public Health building.

Overall, the SPPH building provides a diverse range of informal learning spaces that facilitate individual and group study, meetings, and social interaction. Students can take pride in belonging to a school that provides a beautiful environment for socializing and learning, thereby enhancing student wellbeing.

Conversely, the Civil and Mechanical (CEME) Engineering building offers less spaces for students to study and the overall aesthetic quality of the building is quite poor. The building is made of concrete and there is little to no artwork or plants in the corridors or foyer. There is an open study space with large tables and few benches outside classrooms where students can engage in individual or group study. However, Figure 7 shows that the chairs and tables in the study spaces are unattractive and uncomfortable. There is a lack of natural lighting and poor aesthetic quality of the corridors in the building.



Figure 7. Main corridor in the Civil and Mechanical Engineering building.

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5.3 Campus Public Realm (CPR)

5.3.1 Description

The campus public realm is the collection of outdoor spaces between buildings shared by the university community of students, faculty, staff, area residents, and visitors from the broader Vancouver community. The public realm is comprised of everything from pedestrian pathways, streets, courtyards, common areas, parks, green space, to street furniture and public art. It is shaped by street layout, building massing, and building footprints.

UBC's public realm is the key connective tissue between all users of the campus, including students, faculty, staff, and residents. This shared space plays a significant role in strengthening UBC's identity and supporting campus life. For this reason, interventions dedicated to improving the public realm for health promotion can have significant population-wide benefits.

As a post-secondary institution, students are a primary user of the campus, particularly within the academic core (bounded by Wesbrook Mall, Thunderbird Boulevard, Marine Drive, and Chancellor Boulevard). As a result, investments in the public realm should be targeted and designed to meet the specific needs of the student population whenever possible.

5.3.2 Literature Review

Open Space

The public realm is central to campus life and functions as a meeting point for a variety of people. Hanan (2013, p. 310-311) identified criteria for successful open space on campus based on a literature review:

- Be located where it is easily accessible to and can be seen by potential users;
- Clearly convey the message that the place is available for use and is meant to be used;
- Be beautiful and engaging on both the outside and the inside;
- Be furnished to support the most likely and desirable activities;
- Provide a feeling of security and safety to would be users;
- Encourage use by different subgroups of the likely user population, without any one group's activities disrupting the other's enjoyment;
- Offer an environment that is psychologically comfortable at peak use times, in regard to sun and shade, windiness and the like;
- Allow users the option, either as individuals or as members of group, by using it for special events, or by temporarily claiming personal spaces within the setting;
- Be designed with equal attention paid to place as an expression of visual art and place as social

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setting.

An extensive literature review by Lau et al. (2014) identified three main physical design strategies for promoting healthy campuses: healing gardens, flexible spaces that accommodate different activities, and green buildings that incorporate open space. Based on their literature review, they developed a framework for healthy campus open space design (see Figure 8).

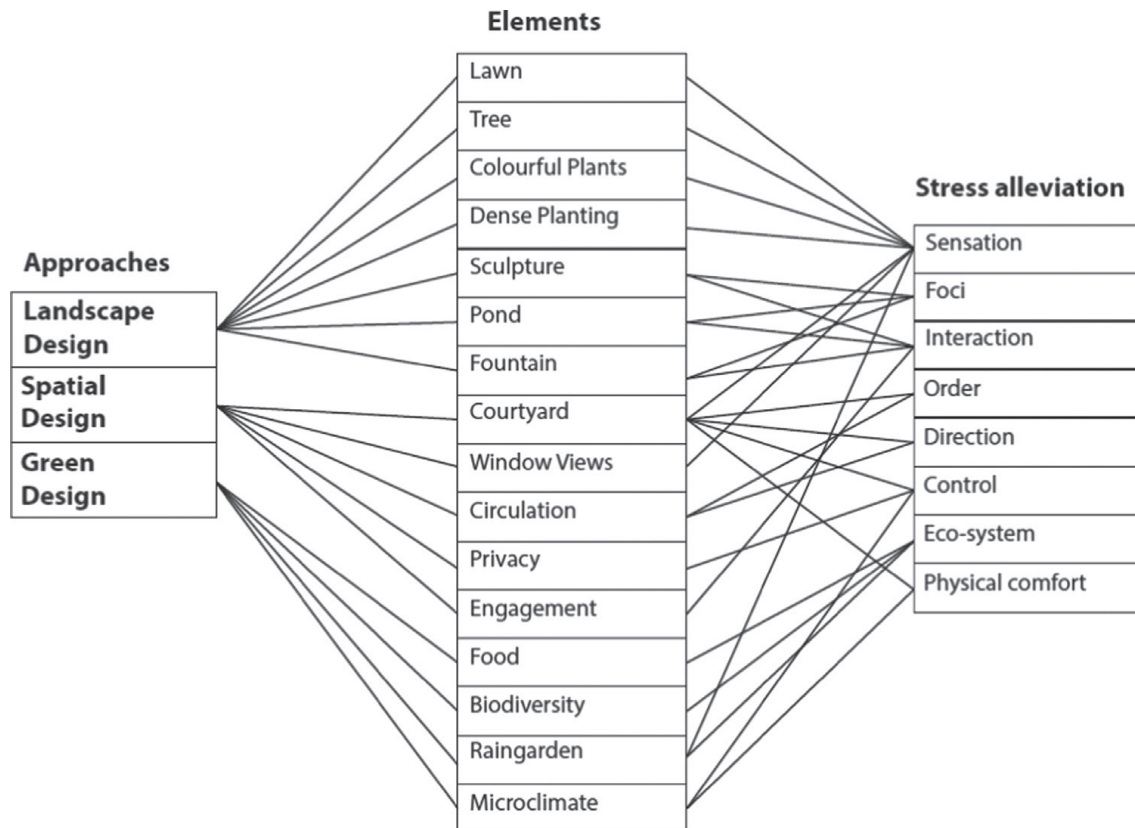


Figure 8. Framework for healthy campus open space design. Source: (Lau et al. 2014)

One strategy pursued at Hong Kong University to promote wellbeing is through the provision of healing gardens. Healing gardens are green spaces with a high quantity of real nature (e.g. vegetation, flowers, water) that have a therapeutic benefit for its users by making people feel safe, less stressed, more comfortable, and invigorated (Lau & Yang, 2009). Lau and Yang (2009) found that comfort within and proximity to green space on campus is important for students. In addition, virtually all students expressed the desire for visual contact of green space from their classroom windows.

While proximity to green space important, useability is also as important in achieving better health outcomes. Factors such as being accessible, aesthetically pleasing, kept in good condition, and providing

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opportunities for activity, relaxation, and interaction must be considered in green space design (Carter & Horwitz, 2014).

5.3.3 Survey Results

Favourite Public Spaces

Overall, students identified the Rose Garden (21 occurrences), Main Mall (14), and Nitobe Memorial Garden (9) as the top three favourite public spaces on campus. Other spaces included the open space behind the Museum of Anthropology (5), Wreck Beach (5), Library Commons (4), the forested area by the Asian Centre and C.K. Choi Building (3), and general forested areas (3). Common descriptive features respondents attached to their responses included “benches” and “green space”.

Recent public realm improvements were also identified by students as a favourite public space, including the Janice Swings, the renovated UBC Bookstore Plaza, Martha Piper Plaza, and the University Boulevard Stormwater Terraces. The inclusion of Janice Swings warrants a highlight, given they were only recently installed during this past semester and have already been very popular with students.

Public Space Use

The majority of students identified “Hanging out with friends” (69.3%), “Studying” (61.4%), “Relaxation” (53.4%), and “Appreciating the view(s)” (53.4%) as primary reasons for using public spaces on campus. The next set of activities included “Exercising” (29.5%) and “Play and fun” (27.3%). “Other” text responses were mainly food-related (e.g. eating lunch).

Public Space Activation

The majority of students identified “Tables and movable chairs” (63.2%) and “Outdoor events or festivals” (50.6%) as activities they would like to see more of in public spaces on campus. Other popular activities included:

- “Outdoor markets” (49.4%);
- “Public art installations” (46.0%);
- “Creative temporary seatings” (41.4%);
- “Food trucks” (40.2%);
- “Performances (e.g. music)” (36.8%).

Improving the Campus Public Realm

Out of the 35 text responses received for suggestions, 40% of responses indicated the need for weather protection from the rain due to Vancouver’s climate:

- “There are so many seating spaces on campus but most of the time they are unusable since it rains the majority of the school year. It would be nice to see some of these places have covering or the installation of covered seating or walk ways.”

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- “More covered areas, maybe even with heat lamps, so that people can be outside even if it’s rainy and cold.”

5.3.4 Recommendations

CPR 1: Develop a resource guide listing outdoor public spaces available on campus.

Online resources are available for students that list informal study spaces on campus. However, there is not a similar comprehensive resource available for public outdoor spaces. A resource guide would increase awareness and visibility of public spaces that are available to students, and provide an alternative to indoor informal learning spaces. This can help address student demand and alleviate capacity issues of existing indoor spaces, particularly informal learning spaces.

CPR 2: Expand rain protection design guidelines to include public realm projects when feasible to improve user comfort and use.

Students identified Vancouver’s rainy climate as a significant barrier to using outdoor public space on campus. Currently, design guidelines for rain protection only exist in the Vancouver Campus Plan for buildings and architectural design. There are no mentions of rain protection guidelines in the Public Realm Plan. Expanding rain protection design guidelines to accommodate public realm projects when possible can increase use and improve student comfort and experience.

Public realm guidelines for rain protection could interface and complement the architectural-based guidelines for example by influencing canopy depth and design in architectural design and expression. As a result, simple public space activation projects such as chairs and tables located immediately by buildings can be sheltered from the rain through better canopies.

CPR 3: Identify heating strategies to increase user comfort and use of public spaces during cold temperatures.

Another strategy to increase the student comfort and experience is through the addition of heaters to protect from cold temperatures. Survey respondents indicated heat lamps or heaters as a potential solution. However, more research would be needed to identify the impact of heaters on greenhouse gas emissions as part of the University’s commitment to GHG emission reductions as part of the UBC Climate Action Plan. Potential mitigation strategies include:

- Adopt alternatives to traditional gas heaters such as the Urban Parasol by Amorphica, an architecture and urban design research studio (see <http://urbanparasol.org>). The Urban Parasol uses thermodynamic solar panels and space blanket insulation to maximize energy absorption from the sun and provide a warm semi-enclosed space. Furthermore, it doubles as rain protection for a win-win solution.
- Initiate a SEEDS project with students from the School of Architecture and Landscape Architecture and/or the Department of Engineering to explore and design potential heating technology for public outdoor spaces.

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- Tap into the Academic District Energy System as an energy source.

CPR 4: Adopt a standards-based approach for green space to assess deficiencies.

Access to and views of green space have been linked to improved health and learning outcomes. One strategy to support planning efforts for green space is to adopt a distance-based standard. For example, all academic buildings could be required to meet a standard of being within a three to five minute walk to a high quality green space. Simple analysis using a Geographic Information System (GIS) using network distance or buffers could support monitoring and evaluation.

A visual audit of visual contact of green space in the public realm from classroom windows could be conducted. This would also identify areas of campuses that are lacking in green space, given how important visual contact is for students and their wellbeing.

Moving beyond simply a distance-based standard, a ranking of the quality and useability of green space on campus could be developed, given that these qualities have an impact on mental health for users. This recommendation could interface with recommendation CPR 1 as an indicator in the resource guide.

CPR 5: Continue to develop and implement creative public space activation strategies.

Recent investments to the public realm, particularly those identified in the Public Realm Plan, have been well received among students as they beautify the campus, provide opportunities for socializing, and increase the availability of informal learning spaces. Survey respondents indicate there is a potential and desire for more creative use of UBC's public spaces. When moving forward, UBC should expand its efforts to involve the student community in activation and programming decisions.

CPR 6: Improve wayfinding for construction detours.

Construction detours present difficulties in navigating the public realm. As a result, it is a source of significant stress for students. Wayfinding should be clear and legible for pedestrians and cyclists through the use of signage describing at the minimum:

- The original path that has been rendered inaccessible and/or blocked;
- Alternative routes to significant destinations along the path accompanied with a map;
- Duration of the detour.

Construction detours can also have other unintended, direct and indirect issues that negatively impact health. Detours may force students to navigate using unfamiliar routes, eroding their sense of security and/or increase their exposure to safety hazards as they are unfamiliar with the route. For example, one of the authors resorted to taking a different route by bike due to a construction detour to their residence. Consequently, they were involved in a cycling accident due to the unfamiliar, alternative route.

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CPR 7: Conduct a market demand analysis for outdoor meditation spaces.

While meditation spaces had the lowest response out of all the public space use options (9.1% of respondents identified it as a reason for public space use), the results suggest an opportunity to serve a population and meet a demand for meditation spaces located in the public realm (along with with indoor spaces). As one respondent expressed, “I would love to ... have a place to go meditate or pray. No such space really exists on campus.” Spirituality is linked to positive wellbeing outcomes.

The inclusion of a outdoor meditation space in the public realm could expose and introduce the concept of meditation to a larger student audience, particularly with dedicated programming from UBC units (e.g. UBC Recreation, Student Development and Services) or AMS student clubs (e.g. UBC Meditation Community) to activate the spaces.

Alternatively, given that the limited land base in the academic core priorities multipurpose and flexible spaces, existing spaces should be identified that would suit the criteria needed for a meditation space. These spaces could be marketed or programmed for meditation, as students may currently feel it is an inappropriate use.

CPR 8: Conduct a market feasibility study for a UBC food truck program.

Food trucks are emerging as a popular public space activation strategy in many cities and downtowns. Food trucks can help animate underperforming spaces on campus or complement busy pedestrian hubs such as the University Square common area, while providing additional, and ideally affordable, food options for students. A market feasibility study can be conducted to determine the demand for a more robust food truck program at UBC, and ensure other food establishments will not be negatively impacted.

5.3.5 Case Study

Recent investments to the public realm have been well received among students. For example, the Janice Swings (see Figure 9) were:

- Relatively affordable;
- Easy to implement;
- Opportunity for immediate stress relief;
- Allow students to reimagine the use of public space on campus;
- Drew on the talent of UBC faculty and students.

63.2% of survey respondents identified “Tables and movable chairs” (see Figure 10) and 41.4% identified “Creative temporary seating” as something they would like to see more of in campus public spaces. Playful activations of the public realm represent a low hanging fruit for UBC to consider in order to make tangible improvements in the lives of students in the public realm.

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Figure 9. One of the Janice Swings by Main Mall and Agricultural Road. Source: Bryan Wong.



Figure 10. Movable tables and chairs by the Bookstore Plaza. An extended canopy would provide rain protection and increase the use of the space during rainy weather. Source: Bryan Wong.

5.0 Best Practices and Recommendations

5.4 Broader Community Environment (BCE)

5.4.1 Description

Promoting wellbeing is a domain of activity that not only falls under UBC's responsibility, but it is also an issue that affects students in their home environments. More than 80% of UBC students live off-campus. However, it is difficult for UBC to directly implement change outside of their own jurisdiction. UBC can, however, affect the wellbeing of students through the broader region and community environment by focusing on the connections to and from UBC for student commuters.

UBC has identified the importance of promoting sustainable modes of transportation (walking, cycling, and transit), all of which have a positive impact on improved health. UBC's Transportation Plan and Land Use Plan are key policy drivers in this area. UBC has set a target that at least two-thirds of all trips to and from UBC will be made by walking, cycling or transit by 2040. Since 1997, UBC's population has grown by 51%. Despite this growth, it has still maintained the same amount of daily traffic as 1997 levels.

Currently, the day-time population at UBC is over 60,000 people, with the vast majority of students commuting from off-campus. The built environment affects how students enter and exit campus and has an important role to play in student wellbeing in the broader region beyond the university. The Wellbeing Initiative can target improving the transportation experience to and from campus to improve wellbeing.

5.4.2 Literature Review

Active Transportation

Active transportation is important for promoting physical and mental health. Only 15% of Canadians obtain the recommended 150 minutes of moderate-to-vigorous physical activity per week (Colley et al., 2011). Moderate-to-vigorous physical activity can include modes of transportation like biking and walking. Low levels of physical activity is related to adverse health effects such as obesity, hypertension, cardiovascular disease, and osteoarthritis (Eckel, 1998; Gotay, 2012). These health issues can create a problem for the health care systems from both a financial and capacity perspective.

Frank et al. (2014) have identified a high demand from Vancouver residents for active transportation. Between 52% to 64% of residents living in the city of Vancouver strongly prefer a neighbourhood that is walkable with good access to public transit.

Cycling Infrastructure

For cyclists, bicycle lanes and bicycle paths are preferred in comparison to cycling in mixed traffic (Hunt and Abraham, 2009). Separated bicycle lanes are even more advantageous from a physical health perspective as they create a buffer distance for safety and air quality benefits. Particulate exposure and inhalation can affect cyclists when cycling next to vehicles. Paths that are offset from the road can negate this issue (Kendrick et al., 2011).

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Public Transit

Active transportation can also be achieved by taking public transit. A study by Besser and Dannenberg (2005) found that 29% of Americans who used transit spend more than 30 minutes a day simply walking to, from, and between transit, thereby fulfilling the recommended physical activity goals. Their study also found that the average transit user spends 19 minutes walking for transit purposes, which is more than when using a private vehicle. Rail users were also more likely to walk more than 30 minutes per day compared to bus users, because rail stations are spaced further apart with less frequent stops.

Transit passes have been found to have a positive relationship with meeting physical activity recommendations (Lachapelle and Frank, 2009). This is evident at UBC through student enrollment in the mandatory U-Pass program. When this system was established in 2003, UBC saw a dramatic increase in transit mode share (see Figure 11 and 12). Daily transit trips to and from UBC have increased 298% from 1998 to 2012.

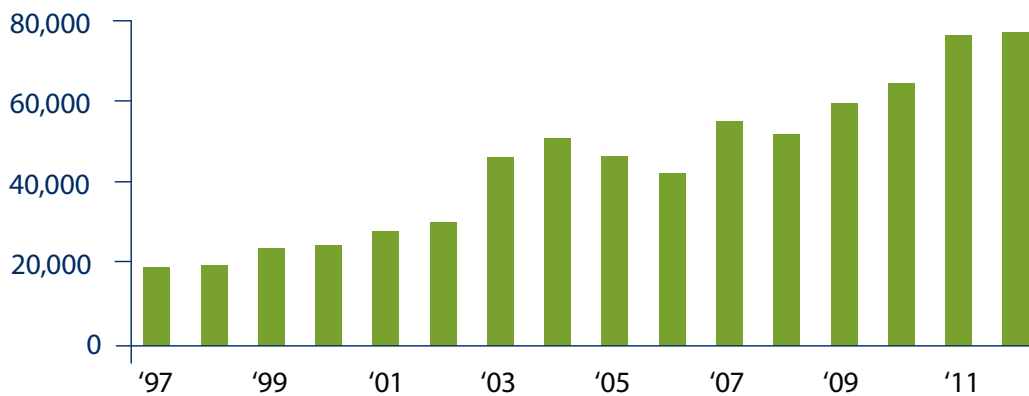


Figure 11. Transit daily person trips to and from UBC from 1997 to 2012.

Source: UBC Transportation Plan 2014.

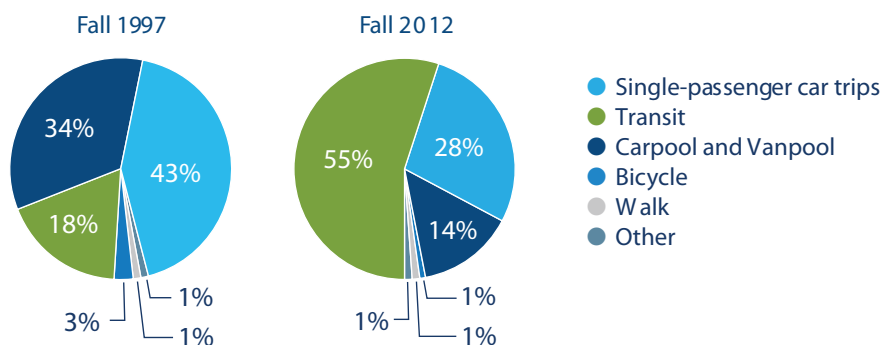


Figure 12. Travel mode share to and from UBC, 1997 and 2012.

Source: UBC Transportation Plan 2014.

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Safety and Stress

There is a higher chance of injury or fatality when driving a private vehicle as compared to taking public transit. The National Transportation Safety Board (2011) found that in 2009, the bus occupant fatality rate was 45 deaths per 100,000 accidents compared with 251 deaths per 100,000 accidents for passenger car occupants. A similar result was found in an Ontario Road Safety Annual report. Passenger car collisions resulted in 433 deaths and 60,049 personal injuries whereas bus passengers resulted in 6 deaths and 938 personal injuries. Overall, there are approximately 64 times more personal injuries in cars than on public transit (Ministry of Transportation of Ontario, 2011).

Traffic stress is an important factor to consider. Traffic stress has a direct relation to individual's depressive symptoms. It also has a negative relation to health status (Gee & Takeuchi, 2004).

Air Quality

Promoting sustainable modes of transportation also confers benefits in air quality improvements. With lower vehicle volumes to UBC, air pollution will have less of an impact on the health of students. Marshall et al. (2009) found a relationship between walkability and air pollution in Metro Vancouver. Neighbourhoods with high walkability and low air pollution tend to be near, but not in the city centre. These neighbourhoods generally have a higher socio-economic profile. There are pockets of areas with low pollution and high walkability that are geographically close to UBC. Students occupy this region of Vancouver, but the wide variation as seen in Figure 13 and 14 show that many students occupy poor spots as well.

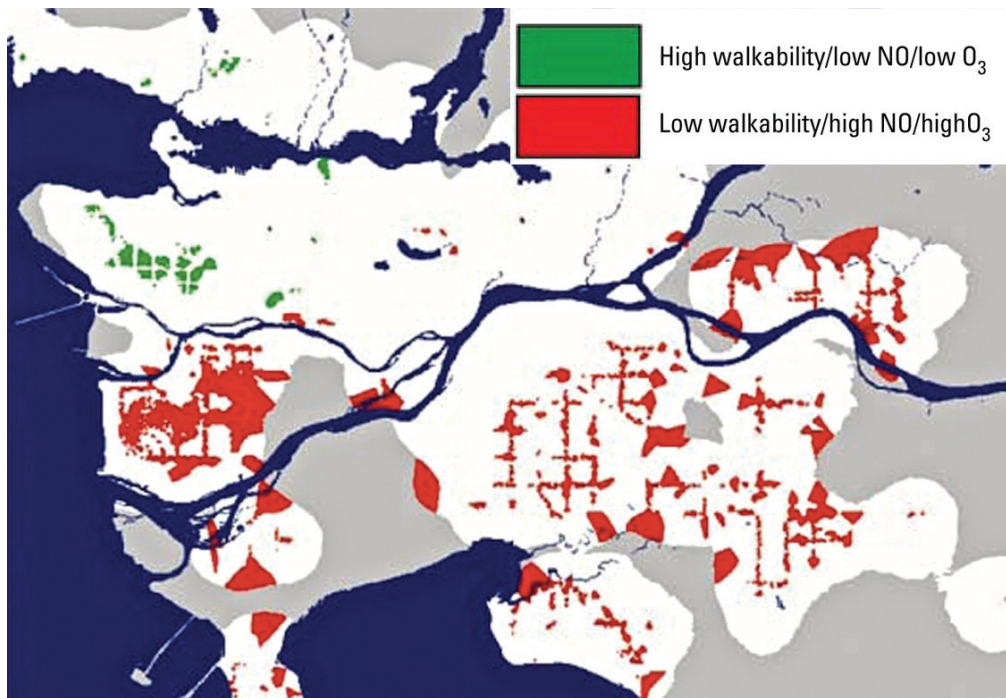


Figure 13. Walkability and air quality in Metro Vancouver.
Source: Marshall et al. (2009).

5.0 Best Practices and Recommendations

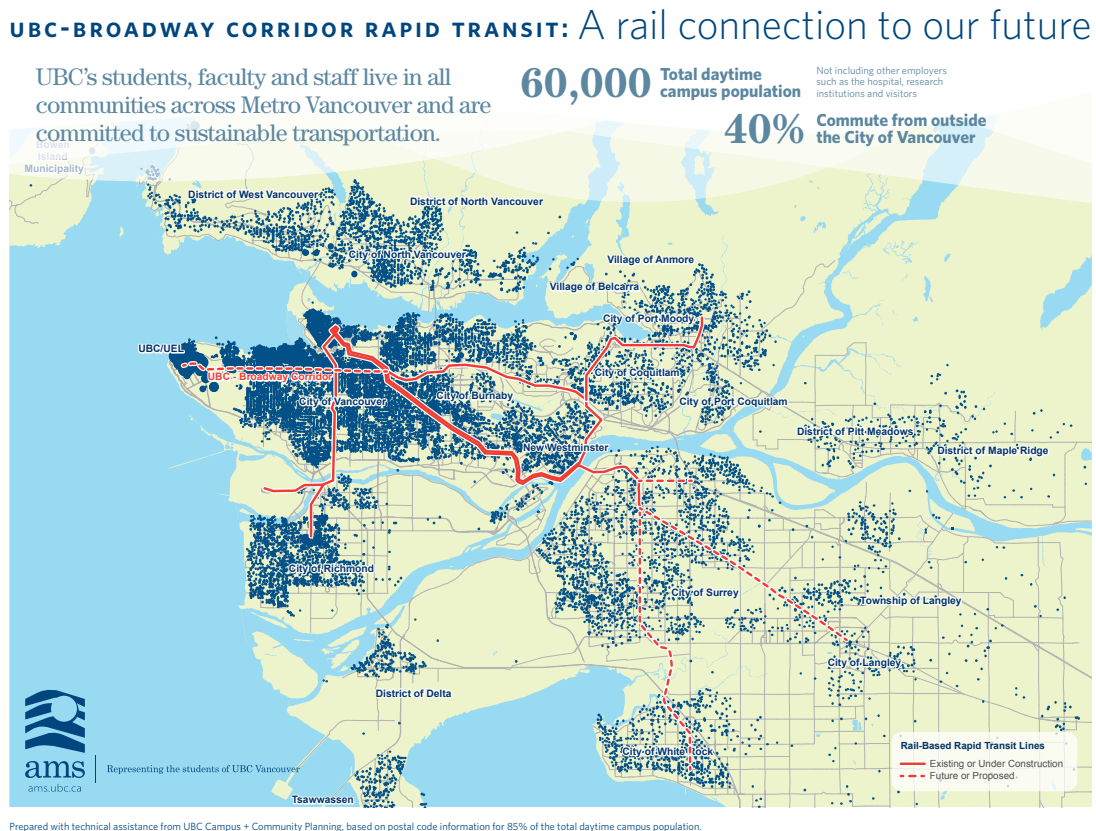


Figure 14. UBC commuter home locations in Metro Vancouver.
Source: Alma Mater Society of UBC Vancouver.

Social Capital and Connections

Walkable neighborhoods near UBC can promote increased social capital along with physical and mental health. Suburban neighbourhoods can result in geographic isolation of people compared to residents in urban neighborhoods. As a result, more pronounced physical and mental health problems can occur under suburban circumstances (Srinivasan et al., 2003).

In addition, UBC has adopted policies to encourage carpooling. Not only does carpooling make more efficient use of transportation infrastructure, it can also have social benefits. Social capital at an individual level can be enhanced through carpooling, as people are more likely to connect socially through sharing rides (Charles & Kline, 2006).

Health Care Savings

A study by Grabow et al. (2012) looked at how much money would be saved through the reduction in health care costs. The authors found that for the 31.3 million people in the study area, there would be 1,295 fewer deaths per year if 50% of short trips (<8 km round trip) were made with bicycle instead of automobile. This would result in approximately \$8 billion per year in health care cost savings.

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5.4.3 Survey Results

Survey respondents were asked about their mode of transportation for commuting to campus and what they found stressful about the experience. 85% of respondents indicated that they used the bus to commute to UBC. Only 22.5% of people said they use a car to commute. Overall, respondents indicated the following aspects of their commute to be stressful:

- Crowded transit (70.1%);
- Bus passups (59.7%);
- Commute time and distance (58.4%);

For respondents who biked to campus, the following aspects of their commute were stressful:

- Weather (71.4%);
- Lack of bike storage (52.4%);
- Fear of bike theft (42.9%).

Students were also asked if they would use certain types of transportation if improvements were made to that specific infrastructure. 81.4% of students agreed or strongly agreed that if transit improvements were made, they would take the bus more regularly. 60.3% of students agreed or strongly agreed that if bicycle infrastructure were improved, they would cycle more regularly. There was no definitive response with regards to improvements on walking infrastructure. This result is expected as walking from off-campus is an unattractive mode due to distance.

5.4.4 Recommendations

BCE 1: Work with TransLink to increase bus service and frequency to UBC in order to avoid crowding. Students have indicated that crowded busses contribute to their daily stress, and have noted that busses do not run frequently enough. TransLink and UBC will need to work in collaboration to identify strategies to increase bus frequency to UBC to serve a growing student population.

BCE 2: Work with the Ministry of Transportation and Infrastructure to create separated bicycle paths on major routes in and out of campus with improved end-of-trip facilities.

Cycling is a form of active transportation that can improve physical wellbeing. To further encourage cycling, cycling routes to and from UBC should be improved through separation. In addition, storage facilities and covered bicycle parking on campus should be available to increase student comfort and experience.

BCE 3: Work with the Ministry of Transportation and Infrastructure to improve nighttime lighting along bicycle paths in and out of campus.

Existing connections in and out of campus are poorly lit, making cycling potentially very dangerous. Bicycle paths should be well lit in order to better promote safety.

5.0 Best Practices and Recommendations

5.4.5 Case Study

Much of the cycling infrastructure to and from UBC is unappealing. There are four main routes to UBC: Chancellor Boulevard, University Boulevard, West 16th Avenue, and Southwest Marine Drive (Figure 15).

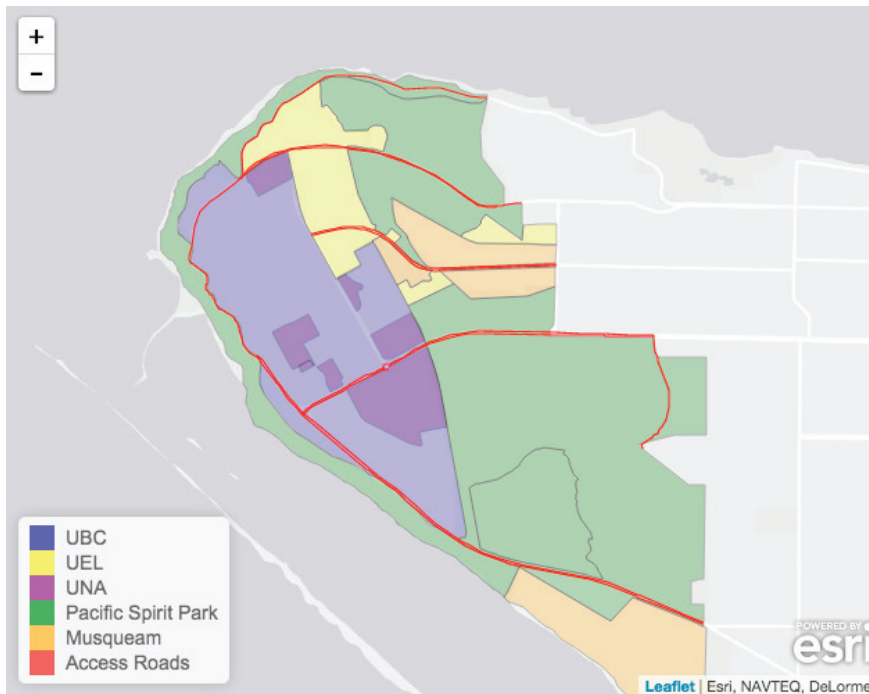


Figure 15. Access roads to UBC and the University Endowment Lands.

Source: UBC/UEL Alliance for Biking and Walking.

All four of the routes listed above have bike lanes adjacent to vehicle traffic. This is especially dangerous on Chancellor Boulevard and Southwest Marine Drive where traffic speeds approach highway levels (60 km/h and 80 km/h).

Current daytime visibility of the bicycle routes are acceptable. However, there was paving on Southwest Marine Drive and University Boulevard in September 2014, and the bicycle lane paint still has yet to be re-established as of December 2014. In contrast, nighttime visibility for cycling to and from campus is very poor. University Boulevard and West 16th Avenue have adequate lighting, but they still can be considered dangerous. In particular, Chancellor Boulevard has poor lighting at night.

Southwest Marine Drive has no street lights at night, making bicycling very dangerous. Improvements to bicycle infrastructure should be pursued in order to help meet UBC's transportation targets for 2040 and promote health. Figures 16 to 19 show nighttime conditions for the four bicycle routes.

5.0 Best Practices and Recommendations



Figure 16. Chancellor Boulevard.



Figure 17. University Boulevard.



Figure 18. West 16th Avenue.



Figure 19. Southwest Marine Drive.

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Appendix A: Student Survey Questionnaire

BACKGROUND

UBC is currently developing a Wellbeing Initiative to promote the mental, physical, and social health of its students, staff, faculty, and area residents.

Students from the [School of Community and Regional Planning](#) and [Population and Public Health](#) are working with the [Office of the Vice President, Students](#) and [Campus + Community Planning](#) for a class project to conduct research on how the following physical campus environments can be better designed from a health perspective:

1. Formal Learning Spaces
2. Informal Learning Spaces
3. Campus Public Realm
4. Surrounding Community Environment

Your input will directly inform the research the students are conducting and contribute to the completion of their class project.

SURVEY

This survey should take you about **5 minutes** to complete. Your participation in the survey is entirely voluntary, and by completing this survey, you are expressing your consent to participate. All of your responses will be anonymous.

Thank you for taking the time to complete this survey. Your responses will be very valuable for our research. Please submit your responses by Friday, December 5, 2014.

If you have any questions or concerns about this research, please contact Victor Ngo at victor.ngo@alumni.ubc.ca. This survey is for a class project as part of PLAN 579/SPPH 571: Public Health, Transportation, and the Built Environment.

DEFINITION OF WELLBEING

Wellbeing is defined as the presence of positive emotions and moods, the absence of negative emotions, satisfaction with life, fulfillment, and positive functioning. It is about judging life positively and feeling good. It encompasses:

- Mental health (e.g. stress, work life balance)
- Physical health (e.g. physical activity)
- Social health (e.g. sense of community and belonging)

The quality of physical space on campuses has been shown to significantly affect achievement, satisfaction, and well-being for students.

Appendix A: Student Survey Questionnaire

FORMAL LEARNING SPACES

Formal learning spaces include classrooms and lab spaces.

1) The following aspects of formal learning spaces have negatively affected my wellbeing and learning experience.
[Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree]

Construction-related noise

Other noise outside the classroom

Poor classroom acoustics

Poor visibility

Poor lighting

Lack of natural lighting

Large class size

Overcrowded classroom

Lack of windows

Uncomfortable furniture

Uncomfortable temperature

Poor air quality

Poor aesthetics (e.g. colour, artwork, plants)

2) Do you have any suggestions on what can be done to formal learning spaces on campus to improve your wellbeing and learning experience?

When responding, do not worry about budget constraints, etc. Feel free to be creative if you desire.

Appendix A: Student Survey Questionnaire

INFORMAL LEARNING SPACES

Informal learning spaces include indoor spaces for a variety of student uses, including study, waiting between classes, socializing, interacting with each other or with instructors. Examples include student lounges, breakout rooms, large open areas with tables and chairs, and cafes.

3) The following aspects of informal learning spaces have negatively affected my wellbeing and learning experience.
[Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree]

- Construction-related noise
- Other noise outside the space
- Poor lighting
- Lack of natural lighting
- Overcrowded
- Lack of windows
- Uncomfortable furniture
- Uncomfortable temperature
- Poor air quality
- Poor aesthetics (e.g. colour, artwork, plants)
- Lack of power outlets

4) The following aspects of informal learning spaces have negatively affected my wellbeing and learning experience.
[Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree]

- Low availability of private study spaces
- Low availability of group study spaces
- Low availability of dining and coffee spaces
- Low availability of social spaces
- Low availability of amenities (e.g. microwaves, sinks)
- Short hours of operation for informal spaces
- Unaffordable food and drink options

5) Do you have any suggestions on what can be done to informal learning spaces on campus to improve your wellbeing and learning experience?

When responding, do not worry about budget constraints, etc. Feel free to be creative if you desire.

Appendix A: Student Survey Questionnaire

CAMPUS PUBLIC REALM

The campus public realm is the collection of outdoor public spaces between buildings shared by everyone at UBC, comprised of everything from courtyards, common areas, pedestrian pathways, streets, parks, green space, forested areas, to street furniture and public art.

6) List your top three favourite public spaces on campus you enjoy using.

Top 1

Top 2

Top 3

7) Check the following reasons why you use public spaces on campus.

Hanging out with friends

Meeting new people

Studying

Play and fun

Exercising (e.g. jogging)

Relaxation

Mediation

Appreciating the view(s)

Other [Type here]

8) Indicate the following activities or programs that you would like to see more of in public spaces on campus.

Tables and movable chairs

Performances (e.g. music)

Food trucks

Outdoor markets

Outdoor events or festivals

Sports events

Public art installations

Creative temporary seatings (e.g. Pop Rocks/bean bags outside of Koerner Library)

Other [Type here]

9) Do you have any suggestions on what can be done to public spaces on campus to improve your wellbeing and campus experience?

When responding, do not worry about budget constraints, etc. Feel free to be creative if you desire.

Appendix A: Student Survey Questionnaire

SURROUNDING COMMUNITY ENVIRONMENT

Please only reply to this question if you live off-campus and commute to UBC.

10) What mode(s) of transportation do you use to commute to UBC?

Walk
Bike
Bus
Car
Other [Type here]

11) What aspect(s) of your commute to UBC do you find stressful?

Commute time and distance from campus
Crowded transit
Full buses passing you
Congested traffic
Lack of parking
High parking fees
Personal safety
Fear of bike theft
Lack of bike storage
Weather
Poor lighting
Other [Type here]

12) Improvements in infrastructure and service for the following modes of transportation would encourage you to use that mode more to commute to UBC.

[Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree]

Walking
Bicycle
Public transit

MISCELLANEOUS

13) What gender do you identify with?

14) What is your association with UBC?

Undergraduate student
Graduate student
Staff
Faculty
Alumni
Other

15) Do you have any additional comments or thoughts you wish to share with us about student wellbeing and learning in relation to the physical campus environment at UBC?

Appendix B: Student Survey Qualitative Responses

Formal Learning Spaces

Q2: Do you have any suggestions on what can be done to formal learning spaces on campus to improve your wellbeing and learning experience?

- In general pretty good, except for the noise part
- 1. The projectors in hebb 100 are not quite big enough. I sat consistently in the first row of the back half of the lecture hall and I had a hard time seeing the smaller print. There is no way that I would be able to see from any further. 2. The projector on the right in EOS 1012 flickers quite often and should be fixed 3. If there are any large lecture halls (that fit 80+ students), they should not be restricted to only chalkboards. While waiting to switch sections, I was in a math 103 class where the professor either didn't use a doc cam because there was none (I don't remember seeing one), or didn't want to, and ended up writing all over the chalkboard I couldn't read his handwriting all that well and there was no record of his notes after class. (This was in LSK 100, I think) When I switched sections, the other prof used a doc cam and uploaded his notes to the section website. Although the use of doc cams and projectors may seem like a privilege, if there really were no projectors in any large lecture hall, one should be installed.
- the projectors are hard to see with the lights turned on- but with lights turned off you can't see the professor. The document cameras seem to be more of a pain than a help in classes- profs have trouble using them and picture isn't very good. A smart board would be nice. More outlets for our electronic age of learning. Video taped lectures to help in review or to help when sick. better seating- some of the seats have very small tables CIRS has nice tables and chairs. The Buchanan seminar rooms that have 2 rows on 1 level mean that half the students have someone sitting directly in front of them and can't see the professor. more rain coverings- UBC keeps installing benches when it rains 7/8 months of the academic year but what about rain covering so that we can get between classes without getting wet.
- To improve learning experience, having chairs and desks that permit more than either a notebook or a laptop on them (such as the traditional lecture hall) encourages lots of space to spread notes out and be comfortable. Times that I can move my chair without moving the desk, and spread my notes out while taking them (to reference readings, other classes, etc.) really help.
- In some buildings (ie. Geography, Buch Tower), the placement of the washrooms really annoy me. Often they are hard to find and in inconvenient places.
- Tables, instead of single-person desk/chair hybrids in classrooms (i.e. in Buchanan) allow for each student to have more space for textbook, workbook, laptop, etc - and would better facilitate group work than the current system. If the reason for the single-person desk/chairs is to cram more students into the classroom, then that too should be reconsidered. Obviously nothing can be done about lecture theatres to the same end, but in the rooms where group work is encouraged, those chairs are highly undesirable.
- any pleasant space is a good one - a space that is neutral and calming is the most beneficial for focus on learning. musty, cold, dark places are not good for learning!
- Big, open-feeling spaces with natural light and flexible arrangements that are suitable to the class size.
- Yeah, maybe having a few more would be nice. This is a huge campus with a massive student body and finding a place to study seems harder and harder from year to year. Also having X11 forwarding on all school computers would be EXTREMELY helpful.
- It is really important to have desks with enough space to feasibly write on. Westbrook is particularly bad for this, as are some of the desks in small classrooms in Buchanan. CHEM B150/B250 sized desks are okay, and full tables are great! This is especially true for writing exams.
- The desks that come attached to the chairs are quite uncomfortable as there really isn't any way to readjust your seating position. I'd suggest getting rid of these, as they are a bit inconvenient. Instead, I would like to see chairs with a bit of cushioning, perhaps, or at least ones that I can adjust or move around a bit.
- I am a civil engineering student. There is construction going on right outside the CE building. We had to move classrooms one day because the noise outside was unbearable and the room was actually shaking.
- I missed a pop quiz and was late for a midterm because of the crossing guards near the construction. I had to take that same midterm with the lovely sound of jackhammers in the background the whole hour and a half. The windows in the classroom (2nd floor of Brock Hall Annex) were too high up for anyone, including the tallest guys in the class, to

Appendix B: Student Survey Qualitative Responses

shut them so we could at least dilute the noise a bit. I consistently have to find new ways to get to my classes or get to the bus loop because new construction fences seem to go up every day. I have been late for work, late for a doctor's appointment, and late for my dad's 50th birthday party all because I missed busses I would have caught if there hadn't been a surprise fence in the way. In summary: GET THIS FUCKING CONSTRUCTION OFF MY FUCKING CAMPUS I SWEAR TO GOD I AM SO CLOSE TO PUNCHING THE NEXT CONSTRUCTION WORKER I SEE IN THE FACE. REPEATEDLY. ...I'm also really cold in most academic buildings on campus. If it weren't for the construction, this would be my biggest complaint. It's hard to take notes when I'm bundled up in several sweaters and a winter jacket just so I don't shiver my way through the whole class.

- Better chairs (ahem, Hennings 200), larger table desks (ahem, Wesbrook), and sometimes though not often the temperature is too hot or cold.
- Make sure the room is able to be cooled without the use of open windows if there is going to be noisy construction going on for an extended period of time!
- Get the temperature working properly in the buildings and change the crappy seating in the classrooms. If there's money to be ripping up streets left and right and putting in water fountains, there should be money to actually, you know, enhance the actual classrooms paying students use. Also, do something about the WiFi.
- In small classes and seminars, having tables or arrangements that are in circles so that everyone is equal and can see each other. Making sure that there are sufficient rooms that can accommodate discussion based courses in an effective way; have discussions in lecture halls or labs is not the best.
- Consult with the student users of the spaces for each room to see how they think the spaces can be improved. Changing the orientation of seating in the room, the style of desks, regulating heat, sound proofing walls...there are too many changes to list here.
- The Musqueam reading room in Irving is amazing. I wish there were more quiet work spaces with big windows like it.
- Replace temporary buildings with nicely appointed permanent buildings.
- Natural lighting would be tremendous!
- Allow temperature to be regulated from within each room. Ensure lighting is appropriate and can be turned on/off in groups (i.e. lights on top of the projector screen have a different switch that lights at the back of the room). If there are no openable windows, more reason to allow temperature to be adjusted inside the room and to have good lighting. Ensure all in-class furniture is acceptably ergonomic (for the most part UBC does a great job at this).
- Think about going beyond the traditional style of lecture halls; changing it from a sloped room with all the power at the front to a level room can increase the amount of interactivity and give students more power to change the way they are situated (both physically and metaphorically) in the classroom.
- More comfortable furniture, softer surfaces, more color, more places to lounge and learn via conversation with peers
- I have only experienced classrooms in West Mall Annex, so I cannot speak for the rest of campus. Classroom in WMAX need more colour and personality (maps, posters, artwork, etc.). AV and sound quality is fine, but sound insulation from outside noise is poor, with construction a constant menace.
- more open to the natural spaces around them? (windows, skylights, etc). also, more comfortable seating (with structured back support and writing areas like tables or desks at appropriate heights).
- Provide more outlets and quiet areas for studying.
- More colour, more light, more indications of a history of students in that space - for instance past work, photographs.
- If money is not an issue..... I think using more natural and locally sourced materials would go a long way! Especially in interiors. Using wood and other natural materials as finishes would go a long way. More careful selection of colors, personally I would prefer a natural palette but thats just my own aesthetic. Including plants in interior spaces would be great, but that would require someone to care for them. Furniture that is made of nice material not plastic-y chairs, couches, and tables would be nice. For me a big hindrance to well being is the ugliness. of institutional interior environments. ALSO I think having pets around would be great for wellbeing. Like, encouraging students to bring their dogs to class. Which sounds crazy and I don't know how that would be managed but having more animals around would be great!
- Smaller class sizes for sure. Perhaps the university should think about sharing resources across different departments. Is it really fair or academically unbiased that some fields of study are better funded than others? If UBC is actually

Appendix B: Student Survey Qualitative Responses

concerned about learning, this an important structural organization that it should look into. Large class sizes result because that's the only way for some departments to raise money. This is not an appropriate solution for funding, and it makes UBC look more like a diploma-granting factory that pushes max numbers of students through than an institute of higher learning.

- There should be more available electrical outlets in all buildings.
- - cleanliness is most important for me
- More windows and natural lighting.
- Would appreciate more standing desks/variety of desk type to allow people to stand or sit as they want/need to. More bright light and natural light, as well as greenery!
- Greater views out windows (ideally into the trees/lanscape).
- Windows in all classrooms to maximize natural lighting Have formal learning spaces connected to/be very close to informal learning spaces/ areas for relaxing/ stretching for students to access during class breaks
- More natural light, better acoustics, more informal learning spaces.
- Increase natural lighting, air flow.
- Basement classrooms without windows or natural lighting should be avoided
- I'm already very satisfied with formal learning spaces .
- More plants and lighting and less congestion of students in classrooms
- Making spaces aesthetically pleasing with lots of windows and natural light. A lot of the new buildings have this, but departmental building during my undergrad was old and ugly, and the floor on which my current department is located is also outdated. Perhaps instead of spending my tuition dollars on UBC's new Vantage College for non-Canadians, renovate some of the outdated buildings where research staff and faculty are.
- Buildings need better ventilation & temperature control More plug ins for laptops More outdoor study space (like the benches and tables outside the IKB Learning Centre) More outdoor seating and tables for eating lunch, socializing or group meetings More garbage/recycling/composting cans around campus
- Most my of discomfort comes from large class size; interacting with the professor and discussing material in class is more difficult when classes are large. Professors still try to allow for discussion, but if there is a big class size, these attempts are most futile.
- Get rid of WMAX. Better Student work spaces for collaboration.
- increase natural lighting, indoor plant-life to improve air quality
- I think the acoustics issue is key to improve my learning experience on campus. Also, It would be great to ha standing desks in the libraries and common study spaces
- The spatial configurations, finishes, and furnishings of the west mall annex project a feeling of neglect, impermanence, and transition. These environmental cues present a backdrop of instability for the academic program and may dampen student ambition. No one likes to be treated as a second-class citizen.
- -more flexible seating -screened windows -nicer carpet
- More natural lighting.
- More windows to see the outdoors, better temperature control and air circulation.
- Construction at UBC has been brutal this year... it would be nice to see them do more during the summer perhaps or at different hours than middle of the day... when it's outside your classroom, it makes it difficult to focus and/or hear what is being presented.
- Get rid of fluorescent lighting.
- I'd love to see meaningful ongoing consultation with students.
- - we recently got standing desks in our main classroom, they are great! - letting the students dictate the space they will be spending lots of their time is important. We feel more comfortable and have a sense of responsibility for the space.

Appendix B: Student Survey Qualitative Responses

Informal Learning Spaces

Q5: Do you have any suggestions on what can be done to informal learning spaces on campus to improve your wellbeing and learning experience?

- There should be some place that's open 24 hours. At my undergraduate university (U of Alberta), one library had a floor that was ALWAYS open 24/7, not just during exams. Also, even SFU Burnaby's library has a longer exam-period open-24-hour policy than UBC's. Another thing that's needed is private study enclosures within larger study spaces. Again at the U of Alberta, there was a building (though not a library) where on the first floor there were these single-person rooms for private study purposes, and they did not require advance booking.
- The libraries are always full during exams it is difficult to find a place to study either as a group or alone during late night study sessions
- Areas that encourage students to bring food for the day, or use a coffee maker would solidify spots for group studying, and time with peers. I like the set up that the Geography student lounge has, but the kitchen area is not too big and there are a lack of power outlets. Having said this, however, it is extremely nice to have a lounge like that for meeting peers, studying, or just killing time before class.
- more outlets, areas for group study, and longer hours
- I like little nooks around campus - everyone likes having a "secret" spot... all it has to be is a table, power outlet and chair.
- Centrally located spaces with more capacity. Spaces with large tables to work around, and movable furniture.
- Lower the price on food. There is no need for everything on campus to be this expensive especially considering how large a school UBC is. Food is one of the last things the university should be trying to make a profit off of.
- MORE STUDY SPACES! Small rooms that don't need to be booked - like some of the ones in Woodward - are amazing places to study, but there are few of them and it's difficult to get to campus early enough to have access (especially as a commuter!)
- More places where one can rest comfortably (short naps, for instance).
- There is no where to study. All the places that are available (libraries and such) are always packed. I can never find anywhere to sit. It always frustrates me when I see someone "reserve" a spot. Sometimes these spots are "reserved" for over an hour. And usually there is more than a couple. This limits the amount of spots available (particularly in Irving K.). Maybe something should be done about this? Increasing public spaces, decreasing the amount of students that go here (haha), or doing something about those 'reserved' spots.
- Construction. Gone. Now. But actually, more comfortable chairs/couches would really be nice, especially in coffee shops. I usually don't go out to study because my butt gets numb from sitting on a hard wooden chair all the time.
- I usually frequent the basement of Woodward library or the Physics Society Lounge in Hennings 307. The basement of Woodward is really nice to study in, however HENN 307 has old chairs and desks that really need replacing. The couches are super comfortable though! Overall, the main issue with Woodward basement or other spaces such as Irving is finding available spots.
- More places to plug in laptops and phones!
- More good, cheap food on campus. My favorite space to study is Seedlings in the Koerner Graduate Building. It is well-lit, has lots of windows with nice views, there are a variety of comfortable seating options, the food and drinks are cheap, and it is not too noisy but still feels cozy and social. For me, this is a great study space and could be emulated in other places on campus. One thing I do not like is the Bean Around the World in the Old Barn. They have signs up that ask students not to take up space with their computers and not to stay for more than 2 hours. It does not feel like a welcoming place to students, which is slightly nonsensical because it is located on a university campus. I think it's a strange oversight that the coffee shop management is allowed to be so unwelcoming to a large community and customer base.
- I love chapman commons, great chairs, quiet but not too quiet, access to computer and printer, people studying. It is by far the best place to be on campus.
- Spend money to make spaces more aesthetically pleasing, and build new spaces if needed.
- Clearly state which spaces are for quiet study, socializing, no cell, etc. Ensure electric plugs are available.

Appendix B: Student Survey Qualitative Responses

- Cheaper food on campus
- More comfortable furniture. More silent study areas.
- Again, table/desks available at appropriate heights for the seats (so writing in notebooks or laptops is comfortable and supported).
- Spaces are linked to the practices and norms for using them. It is one thing to be told this is a student lounge - but if it is usually locked, or in a space surrounded by professor's offices where silence is expected, people are not going to use it for group meetings, or to spend time working together. Also, a graduate student lounge or pub would be a nice designated space to have casual interactions with other graduate students. Many spaces on campus are geared towards undergraduates.
- Nap pods! Mixed-use buildings. I'm really surprised how difficult it can be to find food on campus. Sometimes it's a 15 minute walk.
- outlets, and more areas for private study in open public space
- More group working rooms and explicit socializing vs. group working vs. quiet individual working spaces. Again, more standing options, as well as more light and greenery. The libraries are extremely overcrowded.
- More microwaves in Sub and in lounges of the departments.
- Computer space counts at computer labs in the library so that students know beforehand if there are available spots
- Increase lighting in the hallways for study areas.
- Push construction starting time to 9 am.
- We need an affordable food or drink shop in the SPPH building. There is no dining spaces in SPPH building (student both study and dine in student lounge which is annoying).
- Prices for food and drink are too expensive. Seems like the target customers are not low/no-income students.
- More spaces of rest and comfort should be great! There should be meditation and prayers rooms. I would love to be able to relax, have a place to go meditate or pray and no such space really exists on campus.
- Places with healthy food options that don't cost an arm and a leg More and cleaner spaces for eating (either at restaurants or with home-made lunch) with friends
- If it was more affordable to stay on campus - in terms of affording food, drinks, so that you can stay longer without having to leave for sustenance - I would stay on campus longer to study, socialize, etc. As it stands, however, most of everything in the university too expensive to indulge in on a day-to-day basis.
- Comfortable furniture More welcoming environment for group activity more interaction between students and faculty How about a WMAX dog?
- More microwaves
- -longer hours for food options (eg. weekend hours) -air freshener -student deals and consistent payment method (eg. allow student card at all eateries and vending machines) -less construction -no sleeping on entire couches
- Better lighting, better air quality, more seats.
- More comfortable furniture
- More cafes would be great. There is always a line up at every place that serves coffee... It would be nice to see this improved.
- Coffee places with good lighting - both natural and artificial - and music that is instrumental. Too often the music has lyrics which is distracting to the majority of people.
- More quiet spaces. Libraries are much to crowded. More group study spaces with simple booking processes.
- - It would be lovely to have working appliances in our shared kitchen, also a roof that is not crumbling.

Appendix B: Student Survey Qualitative Responses

Campus Public Realm

Q7: Check the following reasons why you use public spaces on campus. “Other” responses.

- Great conversations
- Transportation
- I don't really use public spaces because they're too far away from my building.
- eating lunch on a nice day
- Eating
- eating
- Having lunch, taking breaks from work
- na I go from home to building to study / I don't use common spaces
- a place to sit down and do a crossword
- Genuinely all of this. I get a lot out of our campus!
- I don't because it rains all the time
- Walking
- Food and beverages
- That's it because it's honestly way too cold during most of the school year to be outside.

Campus Public Realm

Q8: Indicate the following activities or programs that you would like to see more of in public spaces on campus. “Other” responses.

- Massive outdoor covered spaces
- Trees!
- Meditation spaces
- Beer Gardens
- LED lighting displays
- More group study rooms
- covered outdoor area for rainy days
- Covered seating space

Campus Public Realm

Q9: Do you have any suggestions on what can be done to public spaces on campus to improve your wellbeing and campus experience?

- Those “creative temporary seating” bean bags outside Koerner Library are usually so dirty that I wouldn't want to sit on them. Just something to keep in mind.
- Coverings for rainy days. Such a beautiful campus with mild temperatures that can not be appreciated because it is wet! Imagine how nice it would be to sit in the rose garden and enjoy the view on a rainy day under a covering
- more shelter from the rain in outdoor seating areas
- There are so many seating spaces on campus but most of the time they are unusable since it rains the majority of the school year. I would be nice to see some of these places have covering or the installation of covered seating or walk ways.
- I enjoyed the bean bags outside Koerner and the ice sculpture that was set up for Ripple Effect UBC. I think these decorations make campus feel more innovative.
- public space is kind of unusable over the winter, maybe more sheltered and/or even heated areas would be nice in the winter.... also ... a skating rink would be awesome at UBCO
- Weather-appropriate spaces. Coffee-shop like atmosphere. Open at late hours.
- Small room study spaces.

Appendix B: Student Survey Qualitative Responses

- A lot of public buildings are outdated (SUB, the Bird Coop). Focus on completing the new SUB soon. The gym is also so small for the size of university this is. I can never get a good work out in because nearly every single piece of equipment is being used, even when I go right before closing. UBC should focus on making better athletic facilities (gym!)
- CONSTRUCTION. GONE. NOW. Everything is ugly and it's impossible to navigate.
- The only thing I can think of is being able to use them all year. It's too cold and rainy out! :P
- More security. Sometimes the construction workers can be a little over friendly.
- More covered areas, maybe even with heat lamps, so that people can be outside even if it's rainy and cold. Roof access. Covered bike parking.
- Veggie gardens throughout campus would be wonderful. A way to do something fun outside and be social.
- Install some rain covers as appropriate to make spaces more inviting during rainy months
- UBC does a great job at this. Maybe too much, actually!
- Let students have more of a voice in what happens in the public space!
- It's a beautiful campus, I like it! The libraries are crowded, though. Needs more space for studying and relaxing.
- bike paths up the walkways (like Main and East Mall) - when it's the changing-classes time, it is PACKED and hard to navigate, on foot and on bike.
- Music and art would definitely make a difference.
- The swings are great. More of those! Interactive art would be great as well. If there was a way to soften the construction, that would be appreciated. You start to feel that the university isn't a space for you with all of the construction. It's just a massive, real-estate selling and development beast with a life of its own. The University Metabolism - no thought for the wellbeing of students. More wooden furniture/structures. The use of grained wood has been shown to decrease stress levels. Long wooden tables invite conversations with your neighbors. Space that attracts not just students but also employees, faculty, nearby families etc. Some integration into a real community would be good. Community gardens! Edible plants.
- less construction?
- Some sidewalks and pathways need improvement - pot holes, uneven, cracks, generally unsightly
- More spaces to gather with friends/others. More standing options. More options to hang out outside , particularly in the rain (need more shelter!)
- Shelter from the rain and cold- ie. canopies and outdoor heaters Tables for studying and working during the summer
- better and more affordable food courts
- Space outside to sit and play such as MacInnis Field and the hill that used to be next to the SUB
- More enjoyable indoor spaces to sit and have a coffee or chat with people. There are lots of nice outdoor spaces, but when it rains so much a lot of time is spent indoors.
- Meditation spaces
- bike lanes on pedestrian boulevards
- If we could actually USE outdoor public spaces, that would be nice. There's always the constant distraction of construction everywhere, making activities outdoors annoying and not worth it.
- More use of Indigenous/ Coast Salish Art in installations and infrastructure.
- More covered bike racks
- -food trucks -better lighting at night -rain protection -comfortable seating
- Well.... it rains a lot in Vancouver - maybe there would be a way to set up an outdoor area that is sheltered from the rain? Something with a lounge area with couches or chairs, and maybe even a portable heater or two... could make people interested in spending more time outdoors even in the winter!

Appendix B: Student Survey Qualitative Responses

Surrounding Community Environment

Q11: What aspect(s) of your commute to UBC do you find stressful? “Other” responses.

- The bike route on 16th Avenue is not safe
- Buses not running often enough
- Lack of complete bike paths to different parts of campus (e.g. incomplete in sections of Wesbrook Mall)
- 480 drop off/ pick up station - it's far away and the walk back to civilization is neither pleasant nor safe
- sketchy people
- Biking uphill :(
- Construction blocking all the routes I normally take
- That hill coming up to campus
- no direct bus from where I live to the campus
- buses that are supposed to come but never do, inaccurate bus timing; fear of Skytrain delay

Miscellaneous

Q15: Do you have any additional comments or thoughts you wish to share with us about student wellbeing and learning in relation to the physical campus environment at UBC?

- I find the construction both disruptive and dangerous. It restricts movement throughout the campus and can cause accidents when people are expecting to be able to go one way but can't.
- Interventions must be financially low-barriered.
- Construction. I can live with the constant state of construction on campus, but what gets me the most is how MY tuition hikes go towards paying for buildings and improvements I won't get to use. These costs should've been paid up front to the companies contracted to do the construction and pro-rated to incoming students. It's ridiculous that my tuition hikes over the past 4 years go towards a new SUB and heating systems which are for the new students. Absolutely irresponsible on UBC's part and so frustrating to me, especially how I work 30+ hours a week so I can pay rent and eat on top of paying already ridiculous tuition fees
- I think it would be valuable to have more lighting, to improve safety for people who like to jog on campus.
- If I had known what I know now about UBC, I would not have gone here. I would rather take a bus up Burnaby Mountain to SFU every day than deal with the amount of construction on campus. I would rather move to another country to go to school. The construction affects my ability to sleep (because some people don't like waking up to jackhammers at 7am), my ability to travel around campus, and my ability to learn. I'm extremely sensitive to sound and I can't focus on anything with construction noise in the background. The words “a place of mind” are a fucking joke to me. I can't be comfortable in my own mind because it's never quiet during my classes. I don't know what else to say to express how much I hate the construction because I really don't have the words for it. Just picture a tiny girl screaming in inarticulate rage and then swinging a baseball bat at the heads of whoever decided to build all these goddamn buildings AND install fountains/”water features” AND tear up the roads at the same fucking time. That's how I feel. That's how I have felt every single day this semester, and, in fact, the past few years. I'm doing a double-major in 4 years just so I could get out of here faster. Otherwise I'd be doing it in 5. GET RID OF THE FUCKING CONSTRUCTION.
- I like the swings that are put up on the trees on campus right now. Improving bike infrastructure on campus would be so great; more lights on University Blvd., showers/changing rooms in buildings on the southern part of the main campus, covered bike parking. I like Portraits of UBC, the Facebook page, that shows pictures of UBC students in these spaces. Highlighting and communicating use of spaces could be important. Hopefully these efforts to improve physical space are complemented by social efforts as well. Programs to get people out to places like the UBC Farm, the Botanical Gardens, or Pacific Spirit Park can also be a way to use great spaces that already exist on campus.
- I wish there was some actual quiet workspace in WMAX. I work in the library a lot because I require a quiet work setting. Security is a stress though and a time-suck. Having to pack up everything each time I have to go to the washroom takes a great deal of time! The musqueam room in Irving is a saviour though. I'm so glad we have it.
- I love commuter housing but would love access to a food storage locker in the kitchen for weekly guests. It is stressful

Appendix B: Student Survey Qualitative Responses

trying to bring food on the bus with me and I don't have time to shop while in van.

- UBC needs to talk to students more about classroom design, public space design, and other aspects before building new structures. The changing skyline itself can affect the sense of identity on campus; trading trees for skyscrapers sends a very different message. Areas like the Orchard Garden have been pushed to inaccessible spaces by most students (its new location is too far away for many students to want to walk to, and it is hard to wander into it). If UBC is really interested in sustainability, then start getting creative - Main Mall could be used for garden space that can help feed our campus and make everything more affordable. There's lots of ideas and creativity out there - we just need to give people different spaces and ways of expressing how they interact with UBC's physical environment.
- No one likes sitting on hard plastic chairs like they're still in elementary school; get some grown up furniture up in here!
- this is an important study to be undertaking - thanks!
- The campus is a beautiful environment but it lacks quiet study places and is hard to get to especially during rush hours.
- Having more outdoor social events, such as live musical performances, paintings, games, ... will definitely create a more friendly environment. Undergraduate students have a wide variety of activities to do on campus. However, this is not the case for grad students. Even the GSS (graduate student society) is performing very poorly in organizing exciting event for grad students.
- I would use outdoor spaces or other public study spaces more if I knew about them, so if there was a map or tour of these spaces, it would be useful.
- Perhaps Kinesiology students should have been involved in this initiative as well (in addition to public health and planning). Physical activity and well-being is an area of study in the school of kinesiology and perhaps could have contributed valuable insight.
- Meditation spaces please!
- We need more flexible green spaces on campus
- I wish we could have some time to enjoy the campus for what it is. There's just always something going on - mostly construction - that suggests that the university isn't never satisfied with how things are. As a result, I'm just never sure how to feel about the physical campus ... although most of the time, I am frustrated because I didn't come here to admire fenced off areas every five minutes.
- Please improve the bike routes towards UBC and also way finding
- this was a good survey. i would have more to say if i were there more, but i think you're on the right track with your line of questions.
- Construction noise and closures of public spaces have been horrible, and I have seen no benefit from any of it. Noise pollution and a lack of public space are the main reasons I will not consider UBC for graduate studies.