Mount Allison University

2016 Campus Master Plan Update

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Executive Summary – 2016 Campus Master Plan Update

The Update to the Campus Master Plan addresses three major facility planning issues:

1. Shared classroom utilization and teaching space demand
2. Physical condition and optimal use of academic buildings
3. Space requirements for academic activities and space allocation options

Classroom Inventory and Utilization

The University's inventory of shared classroom space comprises 38 rooms with a total seating capacity as currently furnished of 1,974 stations, for a student enrolment of 2,300. Winter 2015 and Fall 2015 scheduling records were analysed to assess how rooms are used for regularly scheduled teaching activity. A summary of the utilization assessment findings is presented in the side bar.

Utilization Assessment Conclusions

- A room utilization rate of approximately 46% of the available daytime hours should be considered low. With 1,974 seats for 2,300 students, there is excess capacity in the classroom pool.
- Uneven distribution of teaching activity limits efficient use of the available space.
- An appropriate target for classroom utilization depends on **total institutional enrolment, nature of programs offered, quality of classroom space and match between room capacities and class enrolments.** Council of Ontario Universities (COU) Space Committee has developed a widely consulted benchmark for classroom use: a target ranging between 30 to 34 hours per week or 75% of the daytime slots. (34 hours out of 45 available hours).
- Proposed targets: Room utilization - 70% to 75% of the available daytime hours. Seat utilization: 65% to 74% of the seats occupied when a room is in use.

Achieving the proposed targets could allow the overall capacity of the classroom pool to be reduced to approximately 1,300 seats with a corresponding reduction to 30 in the number of rooms required.

Classroom Utilization Findings

- Winter 2015 Semester - Average utilization rate: 20.9 hours per week or 46% of the available daytime hours
- Winter 2013 - Average utilization rate: 20.7 hours per week or 46% of the available hours
- Very limited evening use of classrooms
- Friday activity is 30% below utilization rates for Monday to Thursday
- Section size range distribution – over 60% of all classes are taught to sections of 30 or fewer students
- Almost all classes with enrolments larger than 150 students are scheduled on three days of the week – Monday, Wednesday and Friday, leaving unused capacity in the larger rooms on Tuesdays and Thursdays
- Seat utilization compares class enrolments to the seating capacities of the scheduled rooms. For the rooms included in this analysis, the average seat utilization rate for the Winter 2015 semester is 52% and for the Fall 2015 semester is 59%

Building Condition Assessment & Optimal Uses

The quality standard used in assessing building condition is that existing space and building systems should, over time, be improved and maintained in a condition that is, as near as possible, consistent with new space of a quality acceptable to the University. The quality assessment categories used are presented in the sidebar.

For buildings considered **fit-for-function** or **deficient**, a change of use is not considered if there is a requirement for the space. For buildings considered **unfit-for-function**, alternative uses can be considered whose accommodation needs more closely match building attributes. For example, a building originally constructed as 'wet' laboratory facilities for teaching and research may no longer be able to provide state-of-the-art accommodation for wet science activities because of structural grid dimensions, clear ceiling height, or a host of other factors. However, it may be suitable for use as a 'dry' laboratory facility for activities that have less stringent building fabric and system requirements.

Assessment Categories

- **Fit-for-Function**
  Building plan configuration and fabric is generally suitable for current use with required upgrades limited to normal building element cyclical renewal or mandated code upgrades.
- **Deficient**
  Basic building configuration is suitable or adaptable for the current use without major interventions to the building fabric. However, building systems upgrades, code updates, or a significant back log of deferred maintenance items may require significant investment to provide a modern standard of accommodation.
- **Unfit-for-function**
  The configuration and/or quality of the existing structure and systems cannot be upgraded or reconfigured to achieve a modern standard of accommodation for the existing use without a 'heroic' effort, entailing very significant cost and disruption.

Barclay Building

Optimal use is a wet laboratory building for teaching and research. The basic building fabric and floorplate is suitable for conversion to wet laboratory uses.

Key building characteristics

- Constructed in 1967 to house science programs and departments; long span structure providing column-free space; extensive natural light; central location on campus

Gross floor area: 5,375 nasm (57,856 nasf)

Estimated net assignable area available: 3,159 nasm (34,003 nasf)

Current use: chemistry/biochemistry teaching and research laboratories, offices and related support activities

Sir James Dunn Building

Sir James Dunn is most effectively used to accommodate dry activities: classrooms and seminar rooms, offices and service space, computational research, etc.

Key building characteristics

- Constructed in 1957 to house classrooms and science departments; rational plan, easily configured for cellular office space, small to medium capacity instructional spaces; central location on campus
- Gross floor area: 3,359 nasm (36,154 nasf)

Estimated net assignable area available: 2,152 nasm (23,168 nasf)

Current use: common classrooms, math and physics teaching and research, offices and related support activities

Flemington Building

Optimal uses for Flemington are those requiring dry uses: classrooms and seminar rooms, offices and office service functions, computational research, etc. Building fabric and floorplate supports cellular space suitable for offices and office service.

Key building characteristics

- Constructed in 1931; small floor plate; low floor-to-floor height; central location on campus

Gross floor area: 2,974 nasm (32,0008 nasf)

Estimated net assignable area available: 1,893 nasm (20,374 nasf)

Current use: biology teaching and research, offices and related support activities

Gairdner Building

Optimal uses for Gairdner are functions that require large open floor plans, and considering its central campus location, high occupancy loads. The basic building fabric is suitable for conversion to wet laboratory uses.

Key building characteristics

- Constructed in 1965 to house fine arts disciplines; long span structure providing column-free space; extensive natural light; central location on campus

Gross floor area: 1,356 gsm (14,600 gsf)

Net assignable area as currently configured: 930 nasm (10,000 nasf)

Estimated net assignable area available: 865 nasm (9,300 nasf)

Original use: fine art teaching studios, offices and related support activities

Avard-Dixon Building

Optimal uses are those requiring dry space only: classrooms and seminar rooms, offices and office service functions, computational research, etc.

Key building characteristics

- Originally constructed in 1958 as an academic building; substantially rebuilt and expanded in 1994; rational plan, easily configured for cellular office space, small to medium capacity instructional spaces; central location on campus

Gross floor area: 3,464 gsm (37,285 gsf)

Net assignable area: 2,030 nasm (21,850 nasf)

Current use: general purpose classrooms, research space, faculty offices and related support facilities

Crabtree Building

Basement level space is most suitable for low occupancy uses such as storage because of accessibility issues and no natural light. Ground floor space can accommodate mixed academic uses including instructional, research and office activities. Main level provides high quality large and small capacity teaching spaces. Levels 200 & 300 provide good quality accommodation for small capacity instructional rooms, offices and office support functions.

Key building characteristics

- Originally constructed in 1979, alterations made to Main floor instructional spaces; limited accessibility on basement & ground levels; occupied space located mostly below grade with limited natural light; contiguous to the Pickard Bell Library; overall interior and exterior fabric in good condition

Net assignable area – all levels: 1,986 nasm (21,288 nasf)

Gross floor area: 4,043 gsm (43,504 gsf)

Current use: animal quarters, psychology department teaching and research space, shared classrooms, academic and administrative office and related office support facilities

Hart Hall

Hart Hall is most effectively used to accommodate low occupancy uses such as private or shared office space, meeting rooms, and low capacity seminar spaces; it is least suitable for high occupancy uses or uses that require large column–free spaces.

Key building characteristics

- Originally constructed in 1910 as a student residence, converted to academic use in 1965. Further change in 1972 with new entrance and stair structure added; cellular floor plan based on its original use as a student residence; no elevator service; not robust enough for high-occupancy uses because of building age and quality of fabric and finishes; exterior envelope condition is assessed as "good" with recent investments in masonry repair, new windows, and new roofing

Net assignable area: 1,851 nasm (19,922 nasf) as currently configured including 600 nasm to be vacated (6,470 nasf)

Gross floor area: 3,532 gsm (38,000 gsf)

Current use: Accommodation for small classrooms, studio spaces for fine art disciplines, and academic offices and office support space for humanities departments

Academic Space Requirements

To guide the planning options, space requirements have been developed for academic units and related activities that occupy space in the buildings being considered in the Update. Space allocations are based in general on standards established by the Council of Ontario Universities (COU) Space Committee, a standard widely used across Canada. Standards consider the type of activity such as the characteristics of research carried out by different disciplines.

Component	Net Assignable Area (nasm)	Net Assignable Area (nasf)
Faculty of Science – Barclay Occupants	2,211.2	23,792
Faculty of Science – Dunn Occupants	1,327.8	14,287
Faculty of Science – Flemington Occupants	1,778.4	19,136
Faculty of Science – Crabtree Occupants – Psychology Department	507.5	5,461
Faculty of Science – Shared Space	59.0	635
Faculty of Arts - Hart Hall Occupants	482.5	5,192
Faculty of Arts - Crabtree Building Occupants	173.5	1,867
Faculty of Arts - Shared Space	259.0	2,788
Faculty of Social Sciences – Avard-Dixon Building Occupants	898.0	9,662
Faculty of Social Sciences – Shared Space/Dean's Office	224.5	2,416
Total Assignable Area	**7,921.4**	**85,236**

Allocation Scenarios

Scenarios are presented that test the capacity of the buildings to accommodate each user group.

Barclay Building

- Dedicated 'wet' chemistry and biology teaching and research building accommodating decanted labs and lab support from Flemington. Office space relocated to Flemington.
- A new link structure with the Flemington building will help improve accessibility.

Sir James Dunn Building

- Current configuration and occupants are appropriate – mix of common instructional space, academic offices, physics teaching and research laboratories.

Flemington Building

- Existing footprint and layout is best suited to classrooms, dry teaching/research, and academic offices. Current classroom utilization rates suggest office space to be the most appropriate use to accommodate displaced faculty from Barclay as it becomes a dedicated lab-based teaching and research facility.
- A new link structure with the Barclay building will help improve accessibility.

Gairdner Building

- High capacity common use classroom space and/or teaching and research laboratory facilities. With the opportunity to repurpose a central campus building, its use for laboratory activities should be considered.

Avard-Dixon Building

- Mix of common instructional space (capacity of 515 stations including case type teaching and active learning environments); increased presence for the Ron Joyce Centre and administrative and academic office space on Levels 200 and 300.

Crabtree Building

- Basement allocated for storage of Library collections and University archives, allowing an expansion of the study station capacity of the Library.
- Ground floor requires reconfiguration and renovation to improve utilization for a mix of teaching, research and office activities. Vacant offices are well-suited for temporary accommodation and swing space as renewal projects begin.

Hart Hall

- Allocation scenarios are generally limited to using Hart Hall space for office accommodation, and low capacity teaching spaces, subject to providing elevator service to all levels. A smaller building footprint replacing the southern wing with a new at-grade entrance and elevator would increase building accessibility.

Study Conclusions

The estimate of net assignable area required to accommodate the activities of the departments that are housed in the six buildings (Gairdner is vacant) is compared to the available space in the following table. Shared instructional space is not included in the totals.

Space Requirements vs. Inventory

The available space in the seven buildings addressed in the Study substantially exceeds the net assignable area requirement. The principal caveat about the comparison is that the calculation of requirements is based on consistent space standards applied across all departments. The actual configuration of the buildings, including fixed features such as structural grids and window placements, control the degree to which space can be subdivided to match the standard.

However, even with this condition, the extent of the extra space available exceeds the assignable area of any one of the buildings being studied. The results suggest that some of the available space could be decommissioned, either permanently or for an interim period until there is a need identified.

To make a decision about the optimal way forward, consideration needs to be given to the quality of the available space and the cost, both to improve its condition and efficiency, and its operating costs.

Building quality and flexible floorplate make **Barclay** an ideal location for wet teaching and research laboratories. Existing infrastructure servicing wet labs currently accommodated in the building means the creation of additional labs should be relatively straightforward.

The **Dunn** building is generally appropriate for its current occupants. Shared classrooms with low utilization will be able to accommodate activity displaced from repurposed classrooms in other buildings undergoing renewal.

Space Requirements by Faculty/Space Category	Assignable Area (nasm)	Assignable Area (nasf)
Faculty of Arts		
Research Space	50.0	538
Resource Room(s)	100.0	1,076
Office Space	765.0	8,233
Faculty of Arts Total	**915.0**	**9,847**
Faculty of Social Science		
Dedicated Instructional Space	285.0	3,067
Research Space	155.0	1,668
Office Space	682.5	7,343
Faculty of Social Science Total	**1,122.5**	**12,078**
Faculty of Science		
Dedicated Instructional Space	2,337.0	25,146
Research Space	2,543.4	27,367
Office Space	1,003.5	10,798
Faculty of Science Total	**5,883.9**	**63,310**
Total Assignable Area	**7,921.4**	**85,235**

Space Inventory by Building	Assignable Area (nasm)	Assignable Area (nasf)
Barclay	2,885.0	31,054
Dunn	1,690.8	18,191
Flemington	1,691.2	18,202
Avard Dixon	1,151.6	12,391
Crabtree	1,305.4	14,046
Gairdner	931.3	10,021
Hart Hall	1,622.4	17,457
Total Assignable Area	**11,277.7**	**121,374**
DELTA	**3,356.3**	**36,139**

Flemington is ill-suited for wet laboratory use and does not meet the needs of the biology department as currently configured. The building is far more effectively used to accommodate dry activities, particularly office space.

Avard Dixon and Crabtree are both substantial buildings. With some investment in renovation, the utilization of these buildings could be improved to meet the needs of the occupants as proposed in the allocation scenarios.

The quality of the basic fabric of the **Gairdner Building** and its key location in the middle of the campus strongly suggests that it should be repurposed and renovated either as a shared teaching facility or for laboratory uses.

Of the buildings studied, **Hart Hall** is the least flexible in its use and provides the least efficient floor plan. Upgrading and repurposing the vacated space will add capacity that is not required for its current use as office space for the Faculty of Arts. Any future building renewal should prioritize accessibility.

Of the scenarios considered, a viable plan would be to decant laboratories from Flemington to either Barclay or Gairdner and backfill vacated space with offices and support services. Barclay and Gairdner become dedicated wet laboratory buildings with Flemington serving as the primary office building for the Faculty of Science. The exact mixture of lab activity between Barclay and Gairdner is dependent on the vision of the University and available space – both buildings could accommodate a combination of teaching and research or each building could be weighted to one or the other. The ground floor of Crabtree can be used as swing space as these projects are undertaken.

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Section 1: Introduction

In 2013, ECS carried out a Campus Master Plan Update for Mount Allison that examined specific academic buildings and departments to determine space requirements and provide planning scenarios to optimize campus space. This study builds on the 2013 Update by analysing academic buildings and departments that were not previously included, as well as updating inputs and space requirements from the 2013 Report. Its aim is to assess how changing circumstances over the past 13 years affect master plan recommendations, particularly concerning the proposed uses of the Barclay Building, Dunn Building, and Flemington Building.

2002 Campus Master Plan

The 2002 Campus Master Plan is based on the University's 2000 Strategic Plan and has the stated purpose of providing infrastructure and settings to attract and retain high quality students, faculty and staff, creating safe, comfortable and attractive environments, and supporting delivery of the best possible teaching, research, and support services.

Major master plan initiatives accomplished to date include:

- Wallace McCain Student Centre - created from a renovation and reconstruction of Trueman/McConnell buildings
- Student housing - renewal and expansion
- Purdy Crawford Centre for the Arts – completed in 2014

2013 Master Plan Update

The scope of the 2013 Master Plan Update was to:

- Assess classroom utilization and requirements and consider whether a central classroom facility should or could meet those requirements
- Identify underused space in the Crabtree Building
- Document the physical condition of Avard-Dixon, Hart, Gairdner, and Crabtree
- Develop space allocations for the academic departments currently housed in these buildings

2002 MP Planning Goals

- Consolidate all academic programs on the central campus for convenience, interdisciplinary links and efficiency
- Centralize student activities
- Consolidate fine and performing arts
- Create expansion space for the Library to reflect changing needs and expand student study space
- Improve and expand athletics facilities
- Expand the range of housing alternatives on campus

Selected Directions

- Construct new student residences on the North Campus
- Renovate the Trueman/McConnell building to accommodate University Centre activities
- Designate the University Centre site to house fine and performing arts
- Renovate and expand Hart Hall to provide a central classroom facility and faculty office accommodation

2016 Master Plan Update

The scope of the 2016 Master Plan Update is to:

- Update and assess classroom utilization and requirements using 2015 data
- Assess laboratory utilization and requirements (biology, chemistry, mathematics and computer science, physics)
- Document the physical condition of the Barclay, Dunn, and Flemington buildings
- Develop space allocations for all academic departments currently housed in these buildings
- Document existing study and social space on campus
- Provide policies and practices to facilitate management and regular assessment of campus inventory

Like the 2013 Update, the 2016 Update retains key directions outlined in the 2002 Master Plan while adjusting and revising recommendations to reflect institutional and campus developments that have occurred since the Plan was adopted.

Key Deliverables

Deliverables of the Master Plan Update are:

- Summary of existing conditions: current space inventory, teaching space utilization, building condition, and assigned purpose
- Space requirements to meet current and projected needs of academic departments
- Alternative planning scenarios that address the potential presented by new facilities coming on stream
- Recommendations on space management policies and practices

The Master Plan Update study is called for in the University's Strategic Statement for 2007-2016 – Update and 5 Year Action Plan. Recommendations are guided by the strategic mandate to provide "high quality, innovative and immersive programming" across all aspects of the Mount Allison experience in a "financially, physically, human resource, and environmentally sustainable way."

Process

The findings and recommendations contained herein are the result of extensive consultations between ECS and the Facilities Plan Advisory Committee (FPAC), senior administrators, faculty, administrative staff, and students. Consultations were supplemented by several site visits and building tours.

Preliminary findings were presented to the University community at two Open Houses in March 2016 where attendees were invited to submit feedback to ECS and FPAC. Responses received can be found on the Campus Master Plan website. All feedback was considered in the development of the final report.

Structure of this Report

Section 2 presents an updated assessment of classroom utilization and requirements.

Section 3 presents an assessment of laboratory utilization and requirements.

Section 4 presents a summary of the findings of building condition assessment studies.

Section 5 presents space requirements for academic departments accommodated in Barclay, Dunn, and Flemington, and updated space requirements for the academic departments accommodated in Avard-Dixon, Crabtree, and Hart Hall.

Section 6 presents a high-level analysis of study and social space.

Section 7 presents planning directions for matching functions to existing buildings and policies and procedures for space management.

Section 2: Classrooms

The University's academic renewal document – *Changing to Preserve: An Academic Renewal Plan for Mount Allison University 2009-2016* – considers how approaches to timetabling affect program delivery at Mount Allison. The document puts forward recommendations to address timetabling issues with the overall aim of striking a balance between student and faculty needs and preferences, with precedence given to student needs.

The Plan's recommendations include:

- Deans will be responsible for approving and submitting all departmental timetables and will ensure that adequate courses without prerequisites are offered and that, wherever possible, required courses do not conflict.
- Action 44: Beginning in the 2009/10 academic year, a selected number of evening classes will be offered. Wherever possible, and particularly at the lower levels, these courses will not be the sole section of the course available. Evening courses require the approval of the Dean.
- Action 45: With the approval of the Dean, courses may be offered in concentrated form during an appropriate period of the academic year. No department or program will be required to offer a course in a concentrated format.
- Action 46: The Registrar, in consultation with the Provost and the Deans, will develop a process for managing course demand and enrolment by waitlists.

Classroom Inventory

The University's inventory of shared classroom space comprises 38 rooms with a total seating capacity as currently furnished of 1,974 stations, for a student enrolment of 2,300. The table presents the classroom inventory sorted by room capacity ranges.

Classroom Space Inventory

Capacity Range	Room Number	Room Description	Seating Capacity
Up to 20	AVDX 117	Seminar Room	14
	AVDX G9	Classroom	20
	CTEE 315	Seminar Room	11
	CTEE 316	Seminar Room	16
	CTEE M03	Seminar Room	15
	DUNN 111	Seminar Room	13
	DUNN 406	Seminar Room	20
	HART 208	History Reading Room	14
	HART 303	Seminar Room	15
	HART 407	Seminar Room	15
Up to 20 sub-total			*153*
21 - 30	AVDX 116	Classroom (Caseroom)	28
	AVDX 230	Classroom (Caseroom)	28
	CTEE M02	Classroom	30
	DUNN 104	Seminar Room	24
21 - 30 sub-total			*110*
31 - 40	AVDX 120	Classroom	38
	BARC 115	Classroom	40
	CTEE 202	Classroom	36
	FTON 103	Classroom	40
	HART 319	Classroom	38
31 - 40 sub-total			*192*
41 – 50	AVDX 111	Classroom (Caseroom)	46
	BARC 311	Classroom	44
	BENB G03	Classroom	42
	CTEE 223	Classroom	44
	HART 101	Classroom	46
	HART 218	Classroom	45
41 - 50 sub-total			*267*
51 – 60	AVDX 112	Classroom	60
	AVDX G10	Classroom	55
	CTEE M10	Classroom	53
	DUNN 106	Classroom	55
	DUNN 108	Lecture Theatre	60
	LIBR 316	Theatre	60
51 - 60 sub-total			*343*
61 – 100	AVDX 118	Lecture Theatre	75
	AVDX G12	Lecture Theatre	96
	BARC G123	Classroom	90
61 - 100 Sub-total			*261*
101 – 140	BARC G104	Classroom	124
	FTON 116	Lecture Theatre	135
101 - 140 sub-total			*259*
180 – 200+	CTEE M14	Lecture Theatre	205
	DUNN 113	Lecture Theatre	184
180 – 200+ sub-total			*389*
Total Seating Capacity			1,974

Other Teaching Space

In addition to these rooms whose allocation is managed by the Registrar's Office, there are a number of seminar-type spaces considered in this Study where access is controlled by academic departments. Activities accommodated by these spaces include some regularly scheduled classes as well as a range of other academic and administrative activities including meetings and informal study. They also provide space to house resource and reference material collections maintained by the departments. No scheduling data was available for these rooms at the time of publication.

Inventory of Other Space with Instructional Use

Room Number	Room Name	Department	Seating Capacity
Hart Hall Departmental Seminar and Reading Rooms			
HART*106	Johnson Library	Philosophy	10
HART*107	Ebutts Reading Room	Religious Studies	10
HART*208	History Reading Room	History	14
HART*403	Crake Reading Room	Classics	12

Classroom Utilization

Scheduling records for the Winter 2015 and Fall 2015 semesters were analysed to assess how rooms are used for regularly scheduled teaching activity. The analysis looked at room utilization in terms of:

- The number of hours per week that the rooms were scheduled based on a 45-hour scheduling window – 9 hours per day (9 AM to 6 PM), 5 days per week
- Section size range distribution
- Demand for large capacity teaching space
- Seat utilization
- Day of the week utilization

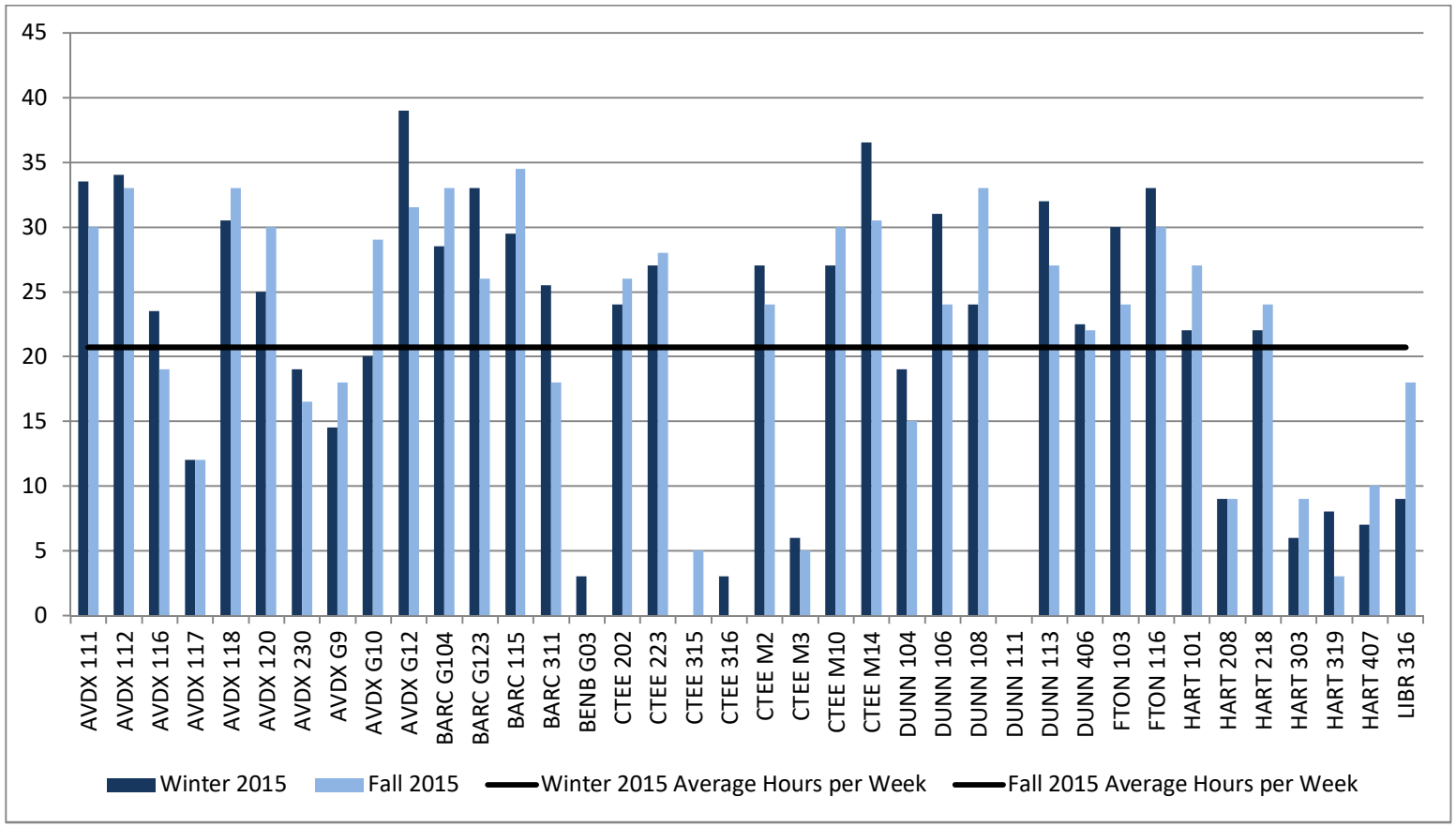
Data was filtered to identify cross-listed courses.

Room Utilization – Hours per week – Winter 2015

				Winter 2015		Fall 2015	
Building Name	Room #	Room Type	Capacity	Hrs per wk	% Util. Rate	Hrs per wk	% Util. Rate
AVDX	AVDX 111	Case Discussion Room	46	33.5	74%	30.0	67%
	AVDX 112	Classroom	60	34.0	76%	33.0	73%
	AVDX 116	Case Discussion Room	28	23.5	52%	19.0	42%
	AVDX 117	Seminar Room	14	12.0	27%	12.0	27%
	AVDX 118	Auditorium	75	30.5	68%	33.0	73%
	AVDX 120	Classroom	38	25.0	56%	30.0	67%
	AVDX 230	Case Discussion Room	28	19.0	42%	16.5	37%
	AVDX G9	Classroom	20	14.5	32%	18.0	40%
	AVDX G10	Classroom	55	20.0	44%	29.0	64%
	AVDX G12	Auditorium	96	39.0	87%	31.5	70%
BARC	BARC G104	Classroom	124	28.5	63%	33.0	73%
	BARC G123	Classroom	90	33.0	73%	26.0	58%
	BARC 115	Classroom	40	29.5	66%	34.5	77%
	BARC 311	Classroom	44	25.5	57%	18.0	40%
BENB	BENB G03	Classroom	42	3.0	7%	0.0	0%
CTEE	CTEE 202	Classroom	36	24.0	53%	26.0	58%
	CTEE 223	Classroom	44	27.0	60%	28.0	62%
	CTEE 315	Seminar Room	11	0.0	0%	5.0	11%
	CTEE 316	Seminar Room	16	3.0	7%	0.0	0%
	CTEE M2	Classroom	30	27.0	60%	24.0	53%
	CTEE M3	Seminar Room	15	6.0	13%	5.0	11%
	CTEE M10	Classroom	53	27.0	60%	30.0	67%
	CTEE M14	Auditorium	205	36.5	81%	30.5	68%
DUNN	DUNN 104	Seminar Room	24	19.0	42%	15.0	33%
	DUNN 106	Classroom	55	31.0	69%	24.0	53%
	DUNN 108	Classroom	60	24.0	53%	33.0	73%
	DUNN 111*	Seminar Room	13	0.0	0%	0.0	0%
	DUNN 113	Auditorium	184	32.0	71%	27.0	60%
	DUNN 406	Seminar Room	20	22.5	50%	22.0	49%
FTON	FTON 103	Classroom	40	30.0	67%	24.0	53%
	FTON 116	Auditorium	135	33.0	73%	30.0	67%
HART	HART 101	Classroom	46	22.0	49%	27.0	60%
	HART 208	History Reading Room	14	9.0	20%	9.0	20%
	HART 218	Classroom	45	22.0	49%	24.0	53%
	HART 303	Seminar Room	15	6.0	13%	9.0	20%
	HART 319	Classroom	38	8.0	18%	3.0	7%
	HART 407	Classroom	15	7.0	16%	10.0	22%
LIBR	LIBR 316	Theatre	60	9.0	20%	18.0	40%
Total Hrs/% Average				**795.5**	**46%**	**787.0**	**46%**

Note: DUNN*111 is used by the MASSIE Program in addition to the scheduled hours indicated above.

Room Utilization – Winter and Fall 2015



Winter average utilization rate: **20.9 hours per week** or 46% of the available hours.

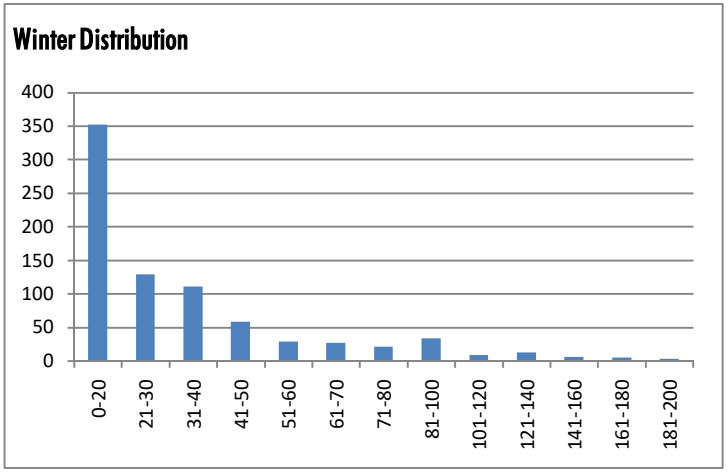
Fall average utilization rate: **20.7 hours per week** or 46% of the available hours.

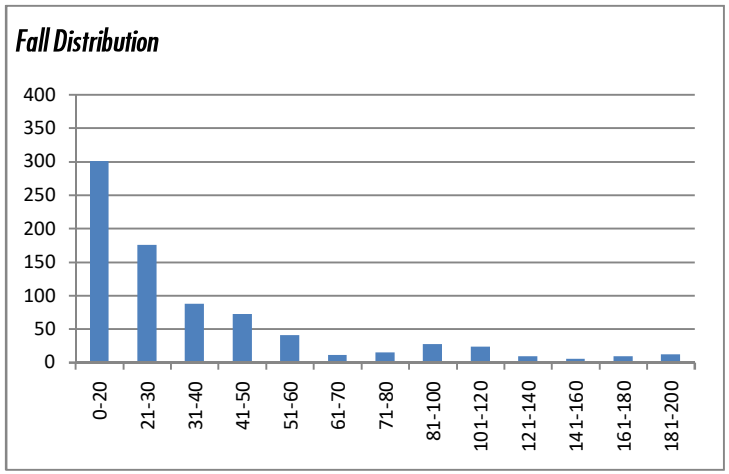
Section Size Range Distribution – Winter 2015/Fall 2015 Semesters

The table and charts illustrate the distribution of hours of activity by section size ranges for the Winter and Fall 2015.

Section Size Range	Winter 2015 Hours per Week	% of Total Hours per Week	Fall 2014 Hours per Week	% of Total Hours per Week
0-20	352.0	44%	301.0	39%
21-30	129.0	16%	175.5	22%
31-40	111.0	14%	87.0	11%
41-50	58.5	7%	72.0	9%
51-60	29.0	4%	40.5	5%
61-70	27.0	3%	11.0	1%
71-80	21.0	3%	15.0	2%
81-100	33.0	4%	27.0	3%
101-120	9.0	1%	23.0	3%
121-140	12.0	2%	9.0	1%
141-160	6.0	1%	5.0	1%
161-180	5.0	1%	9.0	1%
181+	3.0	1%	12.0	2%
Totals	**795.5**	**100%**	**787.0**	**100%**

Over 60% of all classes are taught to sections of 30 or fewer students.





Demand for Large Capacity Teaching Space

The tables list all courses in each semester with enrollments that exceed 150 students.

Winter 2015

Day	Room #	Course Code	Enroll.	Hours
Monday	CTEE M14	PSYC-1011-A	174	1.0
		PSYC-1011-B	188	1.0
	DUNN 113	ANTH-1011-B	174	1.0
Tuesday	DUNN 113	ENGL-1121-A	159	1.5
Wednesday	CTEE M14	PSYC-1011-A	174	1.0
		PSYC-1011-B	188	1.0
	DUNN 113	ANTH-1011-B	174	1.0
Thursday	DUNN 113	ENGL-1121-A	159	1.5
Friday	CTEE M14	PSYC-1011-A	174	1.0
		PSYC-1011-B	188	1.0
Total Hours per Week				11.0

Fall 2015

Days	Room #	Course Code	Enroll	Hours
Monday	CTEE M14	BIOL-1001-A	187	1.0
		PSYC-1001-A	180	1.0
		PSYC-1001-B	186	1.0
	DUNN 113	ANTH-1011-A	162	1.0
Tuesday	CTEE M14	BIOC-1001-A	181	1.5
		SOCI-1001-A	189	1.5
	DUNN 113	GENV-1201-A	162	1.5
Wednesday	CTEE M14	BIOL-1001-A	187	1.0
		PSYC-1001-A	180	1.0
		PSYC-1001-B	186	1.0
	DUNN 113	ANTH-1011-A	162	1.0
Thursday	CTEE M14	BIOC-1001-A	181	1.5
		SOCI-1001-A	189	1.5
	DUNN 113	GENV-1201-A	162	1.5
Friday	CTEE M14	BIOL-1001-A	187	1.0
		PSYC-1001-A	180	1.0
		PSYC-1001-B	186	1.0
	DUNN 113	ANTH-1011-A	162	1.0
Total Hours per Week				21.0

Seat Utilization

Seat utilization compares class enrolments to the seating capacities of the rooms where these courses are taught. For the rooms included in this analysis, the average seat utilization rate for the Winter 2015 semester was 52% and for the Fall 2015 semester is 59%.

The charts on the following pages display the match between class sizes and room capacities, comparing the capacities of the rooms in which classes were scheduled (Y axis of the charts) to the numbers of students or section size of those classes (X axis of the charts). The cells provide a sum of the number of hours per week when classes of a specific size were scheduled in rooms within a specific capacity range.

The background colours indicate the following:

- WHITE background cells: Instructional hours for which **course enrolment ranges match the capacity** ranges of the room. In Winter 2015, 12% of all classes fell into this category. In Fall 2015, 13% of all classes fall into this category.
- DARK BLUE background cells: Instructional hours for which **room capacity exceeds class enrolment.** In Winter 2015, 86% of all classes fell into this category. In Fall 2015, 86% of all classes fall into this category.
- LIGHT BLUE background cells: Instructional hours for which the **room capacity was less than the enrollment entered in the scheduling records.** In principle, this should not occur as there are not enough seats in these rooms to accommodate all the students scheduled to be present. In some cases, rooms have actual capacities that exceed the number used by the Registrar's Office when making room allocations. The difference is often due to quality issues with the space: poor sightlines, cramped seating, etc. Approximately 2% of all classes fall into this category. Winter 2015 overbooked classes occurred in DUNN406 (3hrs), AVDXG9 (10.5hrs), and AVDX120 (3hrs). Fall 2015 overbooked hours also occurred in DUNN406 (3hrs) and AVDXG9 (7.5hrs), as well as AVCX117 (3hrs). Often times, this is a result of seminars or tutorials appearing in the scheduling data with the enrolment of the full course.

Winter 2015 Seat Utilization

	Enrolment Range															
Room Capacity Range	**1-10 Students**	**11-20 Students**	**21-30 Students**	**31-40 Students**	**41-50 Students**	**51-60 Students**	**61-70 Students**	**71-80 Students**	**81-100 Students**	**101-120 Students**	**121-140 Students**	**141-160 Students**	**161-180 Students**	**181-200 Students**	**200+ Students**	**Total Hours**
1-10 Seats	0.0															0.0
11-20 Seats	40.0	26.5	13.5													80.0
21-30 Seats	31.5	40.0	17.0													88.5
31-40 Seats	29.0	50.5	24.5	9.5	3.0											116.5
41-50 Seats	16.0	55.0	25.0	34.0	3.0											133.0
51-60 Seats	19.0	26.0	34.0	28.5	19.5	18.0										145.0
61-70 Seats							0.0									0.0
71-80 Seats	3.0		3.0	12.0		3.5	3.0	6.0								30.5
81-100 Seats	3.0	6.0	12.0	12.0	18.0	3.0	6.0	9.0	3.0							72.0
101-120 Seats										0.0						0.0
121-140 Seats		6.0		3.0	9.0	4.5	9.0	3.0	18.0		9.0					61.5
141-160 Seats												0.0				0.0
161-180 Seats													0.0			0.0
181-200 Seats				6.0	3.0		6.0	3.0	6.0			6.0	2.0	0.0		32.0
200+ Seats	0.5			6.0	3.0		3.0		6.0	9.0	3.0		3.0	3.0	0.0	36.5
Total Hours	**142.0**	**210.0**	**129.0**	**111.0**	**58.5**	**29.0**	**27.0**	**21.0**	**33.0**	**9.0**	**12.0**	**6.0**	**5.0**	**3.0**		**795.5**

	Number of hours where section size matched room capacity	92.0	12%
	Number of hours where section size exceeded room capacity	16.5	2%
	Number of hours where room capacity exceeded section size	687.0	86%
Total		**795.5**	**100%**

Fall 2015 Seat Utilization

	Enrolment Range															
Room Capacity Range	**1-10 Students**	**11-20 Students**	**21-30 Students**	**31-40 Students**	**41-50 Students**	**51-60 Students**	**61-70 Students**	**71-80 Students**	**81-100 Students**	**101-120 Students**	**121-140 Students**	**141-160 Students**	**161-180 Students**	**181-200 Students**	**200+ Students**	**Total Hours**
1-10 Seats	0.0															**0.0**
11-20 Seats	39.0	37.5	10.5			3.0										**90.0**
21-30 Seats	26.0	36.5	12.0													**74.5**
31-40 Seats	9.0	42.0	48.0	18.5												**117.5**
41-50 Seats	9.0	60.0	40.0	15.0	3.0											**127.0**
51-60 Seats	6.0	21.0	50.0	37.5	34.5	18.0										**167.0**
61-70 Seats							0.0									**0.0**
71-80 Seats	3.0	3.0	3.0	3.0	9.0	12.0		0.0								**33.0**
81-100 Seats		6.0	9.0	6.0	16.5	3.0	8.0	3.0	6.0							**57.5**
101-120 Seats										0.0						**0.0**
121-140 Seats		3.0	3.0	6.0	6.0	3.0	3.0	12.0	15.0	6.0	6.0					**63.0**
141-160 Seats												0.0				**0.0**
161-180 Seats													0.0			**0.0**
181-200 Seats					3.0				6.0	6.0	3.0	3.0	6.0	0.0		**27.0**
200+ Seats				1.0		1.5				11.0		2.0	3.0	12.0	0.0	**30.5**
Total Hours	**92.0**	**209.0**	**175.5**	**87.0**	**72.0**	**40.5**	**11.0**	**15.0**	**27.0**	**23.0**	**9.0**	**5.0**	**9.0**	**12.0**	**0.0**	**787.0**

	Number of hours where section size matched room capacity	101.0	13%
	Number of hours where section size exceeded room capacity	13.5	2%
	Number of hours where room capacity exceeded section size	672.5	85%
Total		**787.0**	**100%**

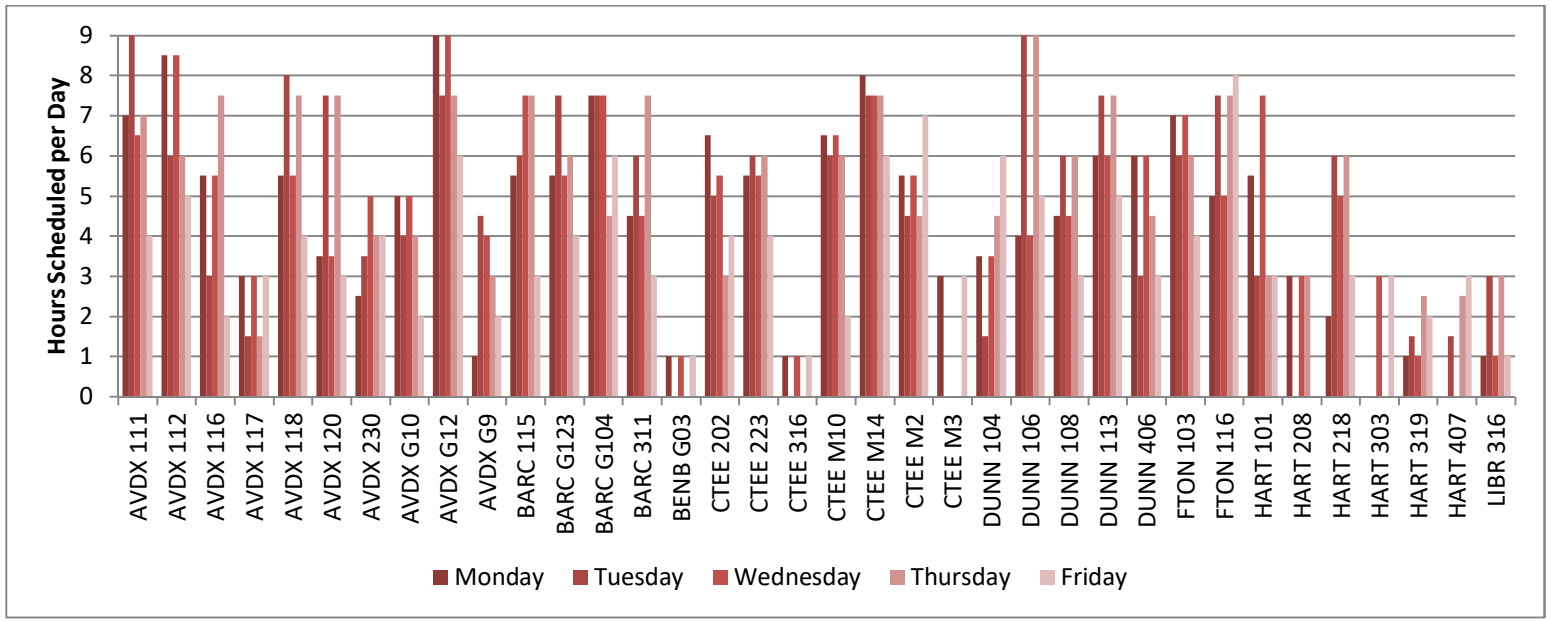
Day of the Week Utilization

The chart below illustrates how scheduled classroom activity was distributed across the week for the Winter 2015 and Fall 2015 semesters. Distribution of class hours by day indicates a fairly even load for Monday through Thursday and a reduced level of scheduled activity on Fridays.

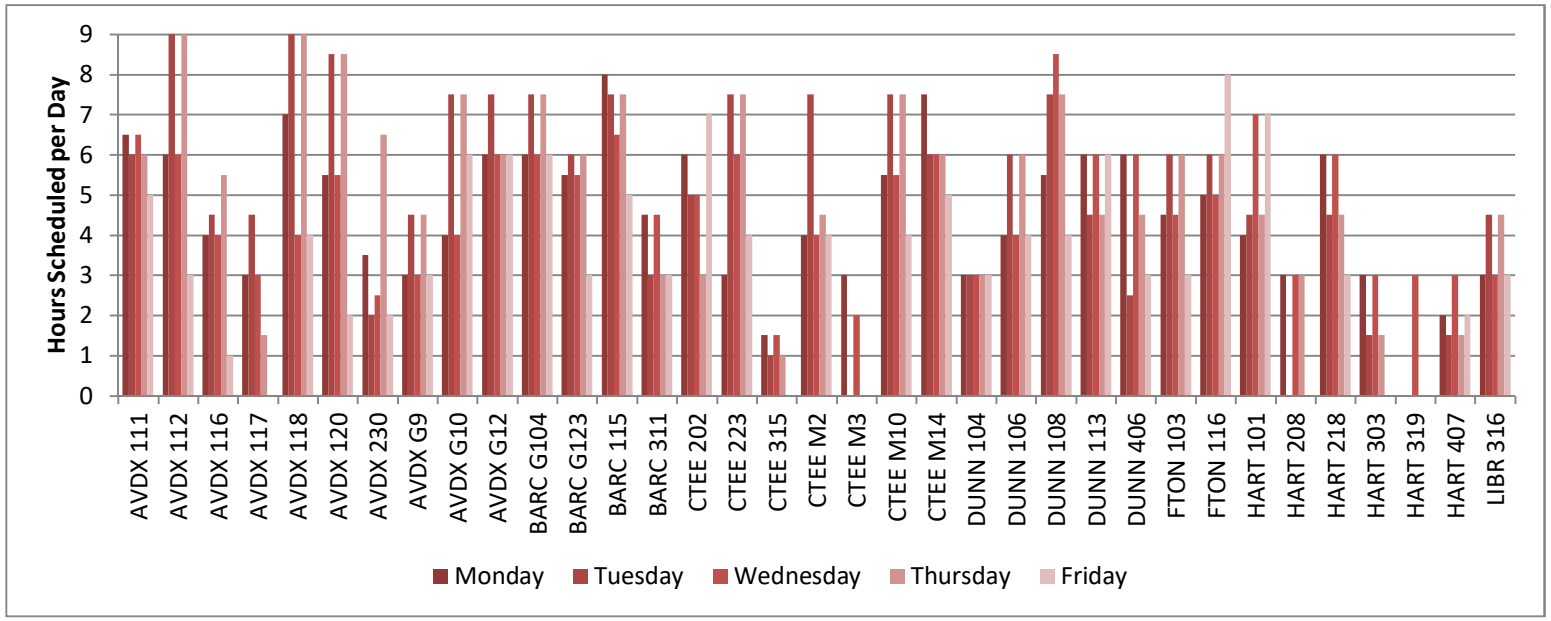
Percentage of Classroom Hours by Day of Week

Semester	Monday	Tuesday	Wednesday	Thursday	Friday
Winter	20%	21%	21%	22%	16%
Fall	20%	22%	21%	22%	15%

Winter 2015



Fall 2015


Hours Scheduled per Day
0
1
2
3
4
5
6
7
8
9
AVDX 111
AVDX 112
AVDX 116
AVDX 117
AVDX 118
AVDX 120
AVDX 230
AVDX G9
AVDX G10
AVDX G12
BARC G104
BARC G123
BARC 115
BARC 311
CTEE 202
CTEE 223
CTEE 315
CTEE M2
CTEE M3
CTEE M10
CTEE M14
DUNN 104
DUNN 106
DUNN 108
DUNN 113
DUNN 406
FTON 103
FTON 116
HART 101
HART 208
HART 218
HART 303
HART 319
HART 407
LIBR 316
Monday
Tuesday
Wednesday
Thursday
Friday

Event Scheduling

Events scheduled in classrooms are another important measure of utilization. For the purpose of this analysis, events are defined as activities other than regularly scheduled instructional sessions and may include tutorials, staff meetings, student clubs, guest lectures, etc. Events may be ad-hoc (occurring only once) or regularly occurring (for example, a weekly staff meeting). The values in the following table are the sum of hours of all events occurring in all 38 rooms in the classroom pool for Fall 2015.

Fall 2015	Day Time Hours	Evening Hours
Week 1	23.0	8.0
Week 2	22.5	29.5
Week 3	29.0	60.5
Week 4	36.0	68.5
Week 5	42.0	85.0
Week 6	58.0	70.0
Week 7	42.5	70.0
Week 8	57.0	63.0
Week 9	76.0	120.5
Week 10	36.0	47.0
Week 11	83.0	111.0
Week 12	57.0	68.5
Week 13	53.0	72.0

On an average week, daytime events add an additional 47 hours of use per week to the classroom pool, or 1.2 additional hours per classroom: this represents an increase of 6% over regularly scheduled class activity in these rooms. Campus events represent the main use of classrooms after 6 PM when there is very limited use of the rooms for regularly scheduled classes.

Massie Program

The Massie Program (Mount Allison Semester Studies in English) offers language courses from August through November. This year the classes were held in DUNN 111 and MCCM 124. Scheduling practice allocates rooms to classes that are part of the regular academic programs. Unused timeslots are then made available for other activities.

Rooms with Low Utilization

A number of rooms have very low utilization rates, less than 20% of the available hours:

Room Number	Capacity	Winter 2015 Hours	Fall 2015 Hours
Bennett			
BENB G03	42	3.0	0.0
Crabtree			
CTEE M03	15	6.0	5.0
CTEE 315	11	0.0	5.0
CTEE 316	16	3.0	0.0
Dunn Rooms			
DUNN 111	13	0.0	0.0
Hart Rooms			
HART 208	14	9.0	9.0
HART 303	15	6.0	9.0
HART 319	38	8.0	---
HART 407	15	9.0	---
Library			
LIBR 316	60	9.0	---

Some instances of low utilization may be due to location; HART 407 is perhaps not considered conveniently located and is not accessible to handicapped users. Other instances may be due to room quality issues, media presentation capabilities, or the condition or type of room furnishings.

Utilization Assessment Summary

- Daytime use of classrooms is approximately 46% of the available timeslots in a 45-hour weekly scheduling grid.
- Some classrooms have hourly use rates that are well below the overall average.
- High enrolment classes are offered almost exclusively in Monday/Wednesday/Friday timeslots.
- There is very limited use of classrooms in evening timeslots for regularly scheduled classes. Evening use is almost exclusively for events.

- Seat utilization rates range between 52% and 59% of the available seats; rates are approximately equivalent across all room capacity ranges.
- Activity is fairly evenly scheduled from Monday to Thursday; Friday use is approximately 30% lower than other days.

This updated analysis using the current academic year's scheduling data shows some significant changes in number of hours scheduled and utilization rates compared to the 2013 Master Plan Update findings.

Scheduled Hours

- Winter semester weekly hours reduced from 806.5 to 787
- Fall semester weekly hours reduced from 851 to 795.5

Utilization Rates

- Winter utilization rate reduced from 48% (21.8 hours/week) to 46% (20.9 hours/week) average utilization. The decrease was not consistent across all rooms with individual rooms showing both increases and decreases. For example, BARC 02, BENB G03, DUNN 104, DUNN 111, HART 101, and HART 319 all had a decrease in utilization of 27% or greater, while AVDX 167, AVDX G09, AVDX G12, CTEE M10, DUNN 406, and LIBR 316 showed an increase in utilization of 34% or greater.
- Fall utilization rate reduced from 51% (23.0 hours/week) to 46% (20. 7 hours/week). As with the Winter semester, the decrease was not evenly spread across the inventory of rooms: individual rooms show both increases and decreases. For example, AVDX 116, AVDX G09, BARC 311, CTEE M02, CTEE 223. HART 319 all showed a 25% or more decrease in average weekly utilization, whereas AVDX G12, BENB G03, CTEE 316, CTEE M14, and HART 407 showed an increase of 65% or greater.
- Seat utilization rates were reduced from 56% to 52% in the Winter semester and 63% to 59% in the Fall compared to last year's records.
- "Day of the week" utilization patterns did not change significantly.

Benchmarks for Classroom Utilization

Establishing appropriate standards or targets for classroom utilization depends on a number of interrelated factors:

- Total enrolment of the institution: large institutions with high enrolment and a greater number of classes offered can generally achieve higher room utilization rates than smaller institutions.
- Nature of the programs offered: the mix of class types in the schedule, whether lecture, laboratory, seminar or tutorial, will affect the scheduling efficiency that can be achieved.
- Quality of the accommodation: higher quality teaching environments, especially those equipped with multimedia presentation systems are in greater demand.
- Match between room capacities and class enrolments: large discrepancies between class sizes and the mix of room capacities adversely affects the efficiency of room use.

Room Utilization

The Council of Ontario Universities Space Committee has developed a widely consulted set of benchmarks for classroom space and other space categories. The COU classroom space utilization benchmark sets a target rate ranging between 30 and 34 hours per week or a utilization rate of up to 75% of the daytime slots. (34 hours out of 45 available hours).

For Mount Allison, the rate of 46% of the available daytime hours should be considered low. With 1,974 seats for 2,300 students, there is excess capacity in the classroom pool.

When rooms demonstrate very low utilization, there are often issues with the quality of the teaching environment provided, location, or there are restrictions placed on access to the room. Low utilization rates in the Hart Hall rooms present a special case. The overall quality of the teaching space and classroom furniture in the building is poor and the rooms are not accessible to handicapped users. As noted above, there are a number of seminar-type spaces that have the capacity to accommodate regularly scheduled classes. However, access to these rooms is controlled by academic departments which set limits on their use.

For Mount Allison, an appropriate target for room utilization is in the range of 70% to 75% of the available hours. Lower rates represent a significant opportunity cost for the University: with more effective use of classrooms, classroom space that is underused can be repurposed for other institutional priorities.

Seat Utilization

The COU seat utilization target range is 65% to 74% of the seats occupied when a room is in use. The current seat utilization rate falls below that threshold.

Reconfiguring the Classroom Pool

If a target utilization rate of 75% of the available daytime hours is used (33.75 hours per week out of the 45 hours available between the normal start time of 9:00 AM and 6:00 PM), underused or poor quality rooms would be able to be taken out of the classroom pool and repurposed.

Using a straight line calculation for classroom space, without adjustments to reflect the current inventory of rooms, the number of rooms required could be reduced from 38 to approximately 25. However, experience shows that making substantial changes to utilization rates cannot be achieved within a short time frame. Past practice, institutional culture, the expectations of academic staff and students are powerful forces for maintaining the status quo. A lower utilization rate target accommodated in a pool of approximately 30 rooms represents an achievable improvement in classroom use for the University. A smaller classroom pool with seating capacities that more closely match demand would reduce the number of seats to approximately 1,300 stations with a corresponding reduction in the floor area.

Classroom Planning Criteria

- Remove rooms from the inventory that are not located in high traffic areas or are embedded in departmental areas;
- Identify issues that are driving poor use of rooms that are located in high traffic locations;
- Identify rooms that do not provide access for handicapped users and assess whether these can be upgraded to meet current code requirements.

Mount Allison requires a classroom planning strategy that:

- Provides a **better match between classroom capacities and enrolments**
- **Reduces the number of seats** available as well as **reduce the number of rooms** used as general purpose classrooms
- **Identifies classroom space that can be repurposed** for other University needs
- **Increases the number of classrooms located in high-traffic areas** of the campus to improve their accessibility and facilitate management of the rooms
- Reduces the number of locations that require investment in **updating and maintaining multimedia presentation systems**
- **Maintains a consistent IT infrastructure design** across all rooms
- **Provides appropriate furniture** in all rooms

Policies and procedures to address these points are described in Section 7: Planning Directions.

Section 3: Laboratories

Laboratory Inventory

The University's inventory of instructional laboratory space comprises 24 rooms with a total seating capacity as currently furnished of 667 stations, for a student enrolment of 2,300. The table presents the laboratory inventory sorted by building.

Instructional Laboratory Space Inventory

Building	Room Number	Room Description	Capacity
Avard-Dixon	AVDX 115	GIS Lab	24
Avard-Dixon sub-total			*24*
Barclay	BARC 102	Chemistry Lab	24
	BARC 106	Chemistry Lab	24
	BARC 201	Biochemistry Lab	24
	BARC 206	Physical Chemistry Lab	24
	BARC 301	Organic Chemistry Lab	20
	BARC 302	Organic/Inorganic Chemistry Lab	20
	BARC 306	Organic/Inorganic Chemistry Lab	24
Barclay sub-total			*160*
Crabtree	CTEE B03	Biopsychology Lab	40
	CTEE 331	Language Lab	22
Crabtree sub-total			*62*
Dunn	DUNN 101	Mac Computer Lab	24
	DUNN 102	Math and CS Computer Lab	44
	DUNN 105	CS Computer Lab	14
	DUNN 304	Astronomy/Astrophysics Lab	34
	DUNN 308	Physics Lab	88
	DUNN 316	Physics Lab	24
	DUNN 402	Physics Lab	16
	DUNN 408	Physics Lab	25
Dunn sub-total			*269*
Flemington	FTON 24	Microbiology Lab	16
	FTON 117	Biology Lab	16
	FTON 213	Biology Lab	36
	FTON 219	Biology Lab	24
	FTON 304	Plant Biology/Ecology Lab	40
	FTON 311	Ornithology/Animal Behaviour Lab	20

Flemington sub-total	*152*

Laboratory Utilization

Scheduling records for the Winter 2015 and Fall 2015 semesters were analysed to assess how labs are used for regularly scheduled teaching activity. The analysis looked at room utilization in terms of:

- Utilization in the number of hours per week that labs were scheduled based on a 45-hour scheduling window – 9 hours per day (9 AM to 6 PM), 5 days per week
- Day of the week utilization

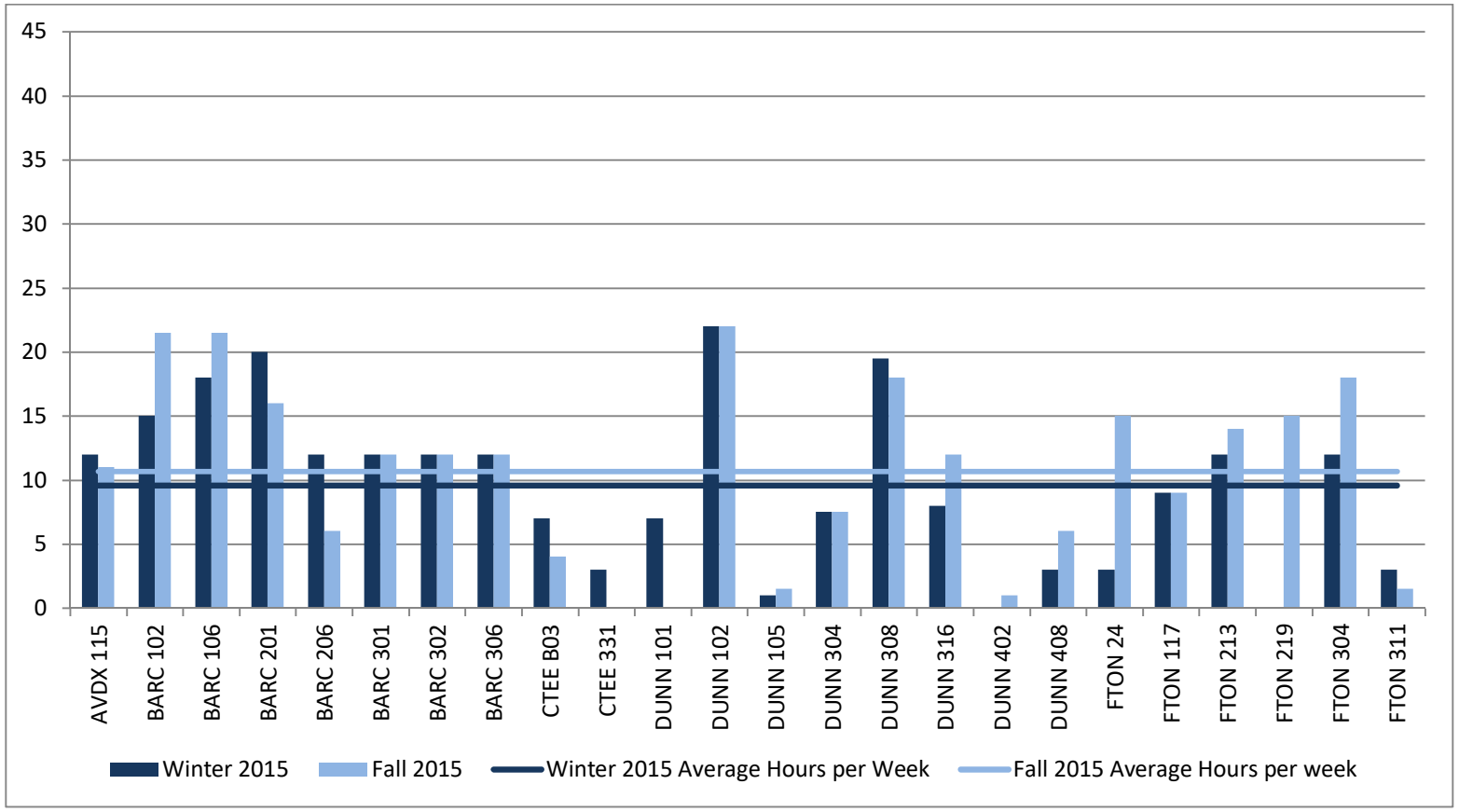
Data was filtered to identify cross-listed courses.

Given the exceedingly low utilization rates for some laboratories, ECS has some concerns about the quality of the scheduling records. Utilization rates presented in this report should be validated by appropriate department heads for accuracy.

Lab Utilization – Hours per week – Winter and Fall 2015

Building Name	Room #	Room Type	Capacity	Winter 2015		Fall 2015	
				Hrs per wk	% Util. Rate	Hrs per wk	% Util. Rate
Avard-Dixon	AVDX 115	GIS Lab	24	12.0	27%	11.0	24%
Barclay	BARC 102	Chemistry Lab	24	15.0	33%	21.5	48%
	BARC 106	Chemistry Lab	24	18.0	40%	21.5	48%
	BARC 201	Biochemistry Lab	24	20.0	44%	16.0	36%
	BARC 206	Physical Chemistry Lab	24	12.0	27%	6.0	13%
	BARC 301	Organic Chemistry Lab	20	12.0	27%	12.0	27%
	BARC 302	Organic/Inorganic Chemistry Lab	20	12.0	27%	12.0	27%
	BARC 306	Organic/Inorganic Chemistry Lab	24	12.0	27%	12.0	27%
Crabtree	CTEE B03	Biopsychology Lab	40	7.0	16%	4.0	9%
	CTEE 331	Language Lab	22	3.0	7%	0.0	0%
Dunn	DUNN 101	Mac Computer Lab	24	7.0	16%	0.0	0%
	DUNN 102	Math and CS Computer Lab	44	22.0	49%	22.0	49%
	DUNN 105	CS Computer Lab	14	1.0	2%	1.5	3%
	DUNN 304	Astronomy/Astrophysics Lab	34	7.5	17%	7.5	17%
	DUNN 308	Physics Lab	88	19.5	43%	18.0	40%
	DUNN 316	Physics Lab	24	8.0	18%	12.0	27%
	DUNN 402	Physics Lab	16	0.0	0%	0.0	0%
	DUNN 408	Physics Lab	25	3.0	7%	6.0	13%
Flemington	FTON 24	Microbiology Lab	16	3.0	7%	15.0	33%
	FTON 117	Biology Lab	16	9.0	20%	9.0	20%
	FTON 213	Biology Lab	36	12.0	27%	14.0	31%
	FTON 219	Biology Lab	24	0.0	0%	15.0	33%
	FTON 304	Plant Biology/Ecology Lab	40	12.0	27%	18.0	40%
	FTON 311	Ornithology/Animal Behaviour Lab	20	3.0	7%	1.5	3%
Total Hrs/% Average				**230.0**	**21%**	**255.5**	**24%**

Laboratory Utilization – Hours per Week – Winter and Fall 2015



Winter average utilization rate: **9.6 hours per week** or 21% of the available hours.

Fall average utilization rate: **10.7 hours per week** or 24% of available hours.

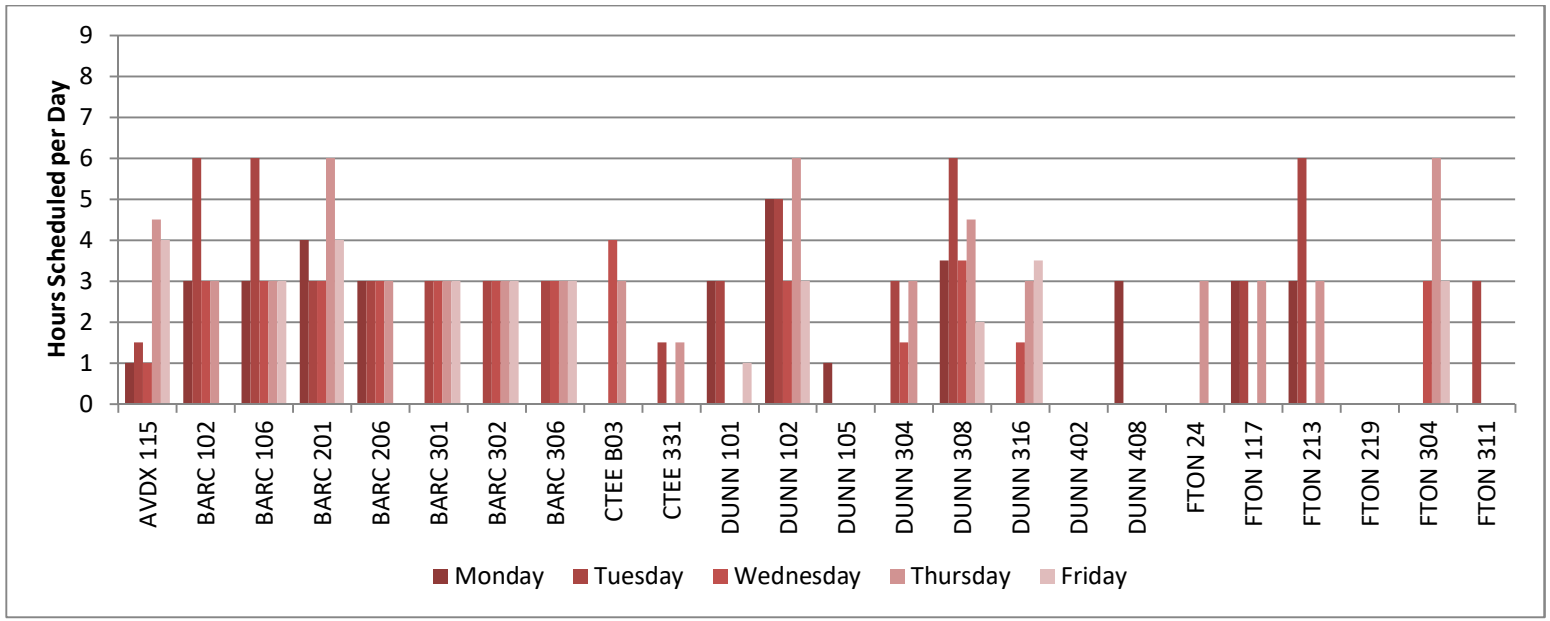
Day of the Week Utilization

The chart below illustrates how scheduled laboratory activity was distributed across the week for the Winter 2015 and Fall 2015 semesters. Distribution of class hours by day indicates a fairly even load for Tuesdays and Thursdays with a reduced level of scheduled activity on Mondays, Wednesdays, and Fridays.

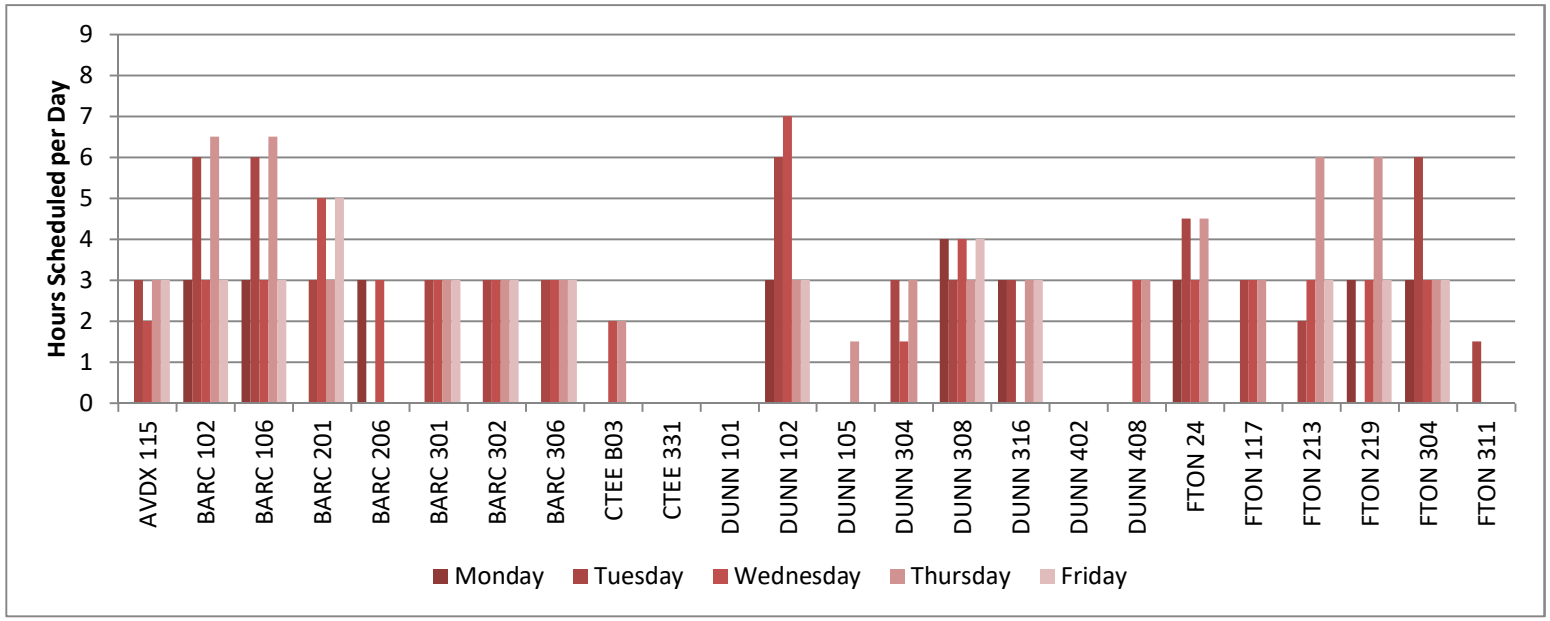
Percentage of Lab Hours by Day of Week

Semester	Monday	Tuesday	Wednesday	Thursday	Friday
Winter	15%	26%	17%	28%	14%
Fall	11%	23%	23%	27%	16%

Winter 2015



Fall 2015


Hours Scheduled per Day
0
1
2
3
4
5
6
7
8
9
AVDX 115
BARC 102
BARC 106
BARC 201
BARC 206
BARC 301
BARC 302
BARC 306
CTEE B03
CTEE 331
DUNN 101
DUNN 102
DUNN 105
DUNN 304
DUNN 308
DUNN 316
DUNN 402
DUNN 408
FTON 24
FTON 117
FTON 213
FTON 219
FTON 304
FTON 311
Monday
Tuesday
Wednesday
Thursday
Friday

Laboratories with Low Utilization

A number of labs have very low utilization rates, less than 20% of the available hours:

Lab Number	Lab Type	Capacity	Winter 2015 Hours	Fall 2015 Hours
Barclay				
BARC 206	Physical Chemistry Lab	24	---	6.0
Crabtree				
CTEE B03	Biopsychology Lab	40	7.0	4.0
CTEE 331	Language Lab	22	3.0	0.0
Dunn				
DUNN 105	CS Computer Lab	14	1.0	1.5
DUNN 304	Astronomy/Astrophysics Lab	34	7.5	7.5
DUNN 316	Physics Lab	24	8.0	12.0
DUNN 402	Physics Lab	16	0.0	0.0
DUNN 408	Physics Lab	25	3.0	6.0
Flemington				
FTON 24	Microbiology Lab	16	3.0	15.0
FTON 117	Biology Lab	16	9.0	9.0
FTON 311	Ornithology/Animal Behaviour Lab	20	3.0	1.5

Laboratory Utilization Assessment Summary

- Daytime use of instructional laboratories is approximately 22% of the available timeslots in a 45 hour weekly scheduling grid.
- BARC 102/106/201, DUNN 102/308, and FTON 213/304 are all scheduled for six hours on certain days of the week. All others are scheduled for less than six hours per day and some instructional laboratories have hourly use rates that are well below the overall average.
- There is only one scheduled evening class in AVDX 115 in Winter 2015.
- Activity is fairly evenly scheduled on Tuesdays and Thursdays; Monday, Wednesday, and Friday use is approximately 40% lower than other days. This follows the University preference to alternate theoretical with practical instruction.

Benchmarks for Instructional Laboratory Utilization

Establishing appropriate standards or targets for instructional laboratory utilization depends on a number of interrelated factors:

- Total enrolment of the institution: large institutions with high enrolment and a greater number of classes offered can generally achieve higher lab utilization rates than smaller institutions.
- Nature of the programs offered: the mix of class types in the schedule, whether lecture, laboratory, seminar or tutorial, will affect the scheduling efficiency that can be achieved.
- Quality of the accommodation: higher quality teaching environments, especially those equipped with multimedia presentation systems are in greater demand.

Room Utilization

The Council of Ontario Universities Space Committee has developed a widely consulted set of benchmarks for laboratory space and other space categories. The COU instructional laboratory space utilization benchmark sets a target rate of 18 hours per week or a utilization rate of up to 40% of the daytime slots. (18 hours out of 45 available hours).

For Mount Allison, the rates of approximately 21% and 24% of the available daytime hours should be considered low.

Scheduling Analysis

The following table shows how many of the total number of labs are scheduled in the three science buildings during morning, afternoon, and evening hours.

	Monday	Tuesday	Wednesday	Thursday	Friday
Flemington – 6 Labs					
Morning	-	2	-	3	-
Afternoon	3	5	5	5	3
Evening	-	-	-	-	-
Barclay – 7 Labs					
Morning	-	-	-	2	-
Afternoon	3	6	7	6	6
Evening	-	-	-	2	-
Dunn – 8 Labs					
Morning	1	3	2	2	1
Afternoon	3	3	4	5	2
Evening	-	-	-	-	-

The majority of science labs are scheduled during afternoon hours. There is limited and infrequent morning usage, and almost zero usage in evenings. This points to current scheduling practices – lab instruction in the afternoon often following theoretical instruction in the morning – as being the primary driver of low utilization in these rooms. As a result, any desired reduction in the number of laboratories will first require and change in scheduling policy to move some of this activity to other underused slots during the day.

This type of scheduling is not uncommon, however it is not encouraged. Traditionally, lab activity was scheduled in the afternoon to allow students to apply theory taught during morning sessions. Modern and dynamic institutions should not find it unreasonable to have a lab session take place the day following theoretical instruction.

Mount Allison requires a laboratory planning strategy that:

- Reduces the number of labs
- Identifies lab space that can be repurposed for other University needs
- Optimizes scheduling practices to more equitably distribute lab hours throughout the day

Policies and procedures to address these points are described in Section 7: Planning Directions.

Section 4: Building Condition Assessment

This section provides condition assessments of the principal campus buildings that are the focus of this Master Plan Update.

Assessment Criteria

Buildings are assessed qualitatively as fitting one of three broad categories:

- Fit for function
  The plan configuration and building fabric is generally suitable for the current use with required upgrades limited to normal building element cyclical renewal or mandated code upgrades.
- Deficient
  The basic configuration is suitable or adaptable for the current use without major interventions to the building fabric. However, building systems upgrades, code updates, or a significant back log of deferred maintenance items may require significant investment to provide a modern standard of accommodation.
- Unfit for function
  The configuration and/or quality of the existing structure and systems cannot be upgraded or reconfigured to achieve a modern standard of accommodation for the existing use without an 'heroic' effort, entailing very significant cost and disruption.

The standard at the heart of this assessment is that the quality of existing space and building systems should, over time, be improved and maintained to a standard that, as near as possible, is consistent with new space. The standard for measuring the extent to which that objective is met is the design standards that the University would adopt for new construction.

Conditions that influence the extent to which the standard is pursued include:

- Historical value of existing buildings and the role that they may play in the overall life of the University community. For example, for buildings with significant historical value, lower standards for building environmental control may be an acceptable trade-off for retaining the building.
- Financial realities may limit the extent of the investment that it is reasonable to make in a particular building at a particular point in time.

For buildings that fall into the deficient category, alternative uses can be considered whose requirements more closely match the building's attributes. For example, buildings constructed as 'wet' laboratory facilities for teaching and research may not be able to provide state-of-the-art accommodation for wet science activities because of structural grid dimensions, clear ceiling height, or a host of other factors but may be suitable for use as 'dry' laboratory facilities which generally have less stringent building system and fabric standards.

Matching Building Characteristics to Functional Requirements

For individual buildings, the standard of highest and best use matches the functional requirements of specific activities to the configuration of the structure, the design and capacity of building systems and the overall qualities of the available space.

For example, wide clear span space is suitable for large capacity teaching spaces, teaching and research laboratories, studios, etc. Smaller, cellular space is more effectively used for office and related occupancies.

The 2013 CMP Update provided condition assessments for:

- Avard-Dixon Building
- Crabtree Building
- Gairdner Building
- Hart Hall

Commentaries for three additional buildings are also provided

- Barclay Building
- Sir James Dunn Building
- Flemington Building

Floor plans showing current uses of each building are provided with the commentaries.

Barclay Building

Constructed in 1967 to house science programs and departments.

Gross floor area:	5,375 gsm (57,856 gsf)
Net assignable area:	3,159 nasm (34,003 nasf) as currently configured
Current use:	Teaching and research laboratories, department and faculty offices for Chemistry department and related support activities

Building Configuration and Fabric

A four-story structure: ground level with two floors above and a basement below grade. The building is connected to the Flemington Building at the basement and second levels through the greenhouse structure which was constructed as a later addition to the building. There is no connection provided at the main floor level. Barclay shares an exit stair with Hart Hall.

The structure is reinforced concrete and, based on visual inspection, the building exterior appears to be in good condition. Similarly, interior finishes appear to be in good condition. Major investment has been made in upgrades to the mechanical ventilation system to improve the capacity of fumehoods and related equipment.

Fit to Function Considerations

The building has a simple repeated structural module with dimensions that provide suitable space for its current uses. The plan provides the flexibility required, with investment, to reconfigure teaching and research spaces to meet evolving directions in laboratory design and layout.

Accessibility

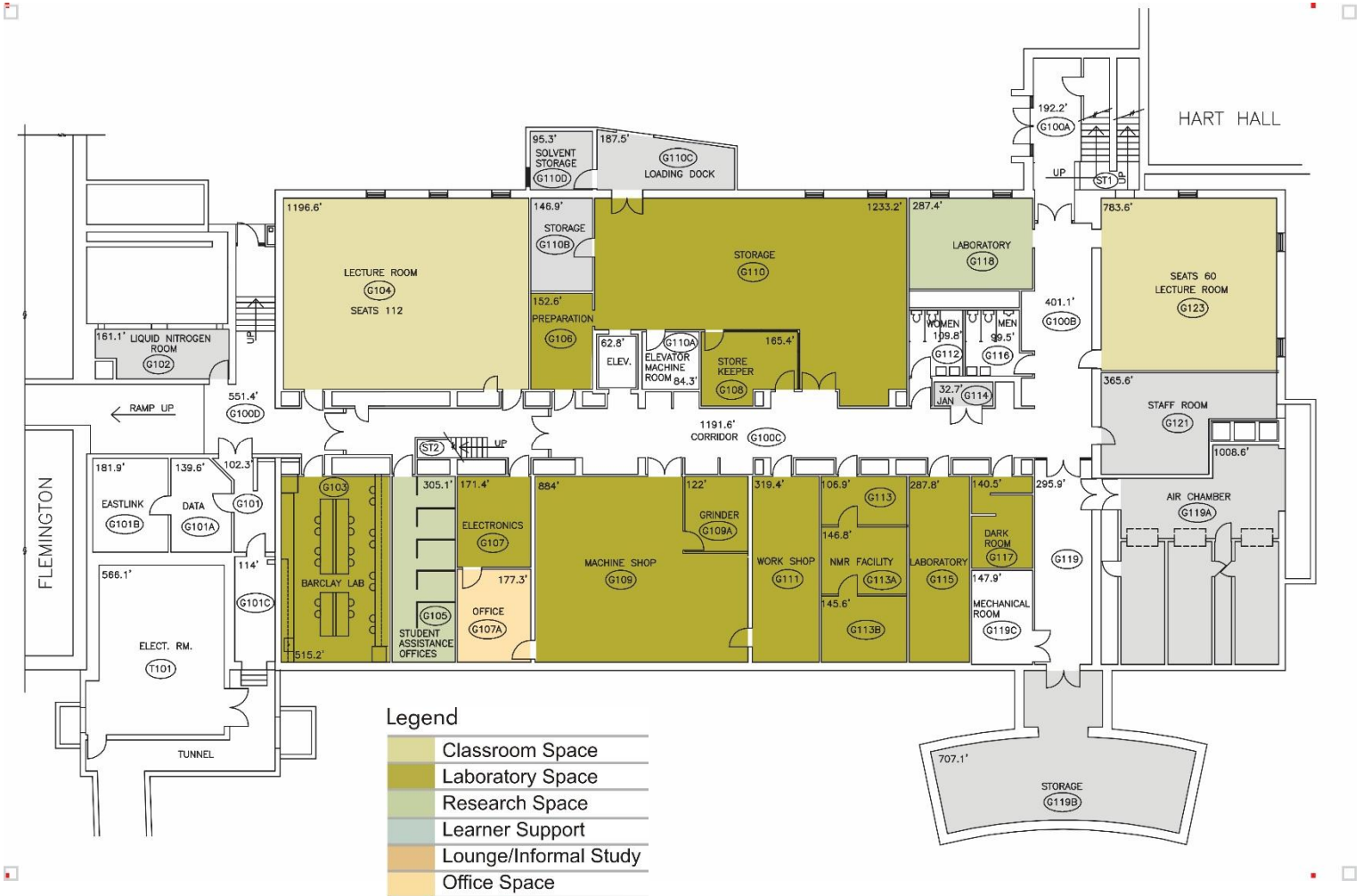
Ground floor is accessible from south entrance and the basement is accessible from the north service entrance. An elevator provides internal access to all levels of the building. A ramp in the basement connects the building to Flemington; there is no direct internal access to Hart Hall.

Campus Planning Context

The building occupies a prime central location and frames the campus quad. Its capacity and configuration and its physical links to Flemington makes it a suitable focus for development of science teaching and research facilities. Options for expansion of the building are limited: no assessment of the possibility of vertical expansion has been carried and the location of Hart Hall to the east limits expansion in that direction.

Barclay Floor Plans

Level 000 – Basement



Level 100 – Main Floor

Level 200 – Second Floor

Legend

- Classroom Space
- Laboratory Space
- Research Space
- Learner Support
- Lounge/Informal Study
- Office Space
- Office Service Space
- Other Space
- Vacated Space

Level 300 – Third Floor

Legend

Classroom Space
Laboratory Space
Research Space
Learner Support
Lounge/Informal Study
Office Space
Office Service Space
Other Space
Vacated Space

Sir James Dunn Building

Constructed in 1957 to house classrooms and science departments

Gross floor area:	3,166 gsm (36,154 gsf)
Net assignable area:	2,152 nasm (23,164 nasf) as currently configured
Current use:	classrooms; mathematics and physics laboratories, offices, and related support activities

Building Configuration and Fabric

A four-level structure: ground level and three floors above grade

Fit to Function Considerations

Similar to the Avard-Dixon Building, Dunn provides a good standard model for a multipurpose academic building. The multi-storey portion of the building accommodates a range of uses: medium capacity classrooms, dry teaching and research laboratories, offices and office service functions.

Accessibility

The ground floor is accessible from the east and south entrances, and a ramp navigates an interior change in gradient. An elevator is located at the north end of the building.

Campus Planning Context

The building is located on the western edge of campus at the corner of York and Salem streets across the street from a parking lot and residence buildings. The site provides limited capacity for expansion of the building footprint.

Dunn Building Floor Plans

Level 100 – Main Floor

Legend

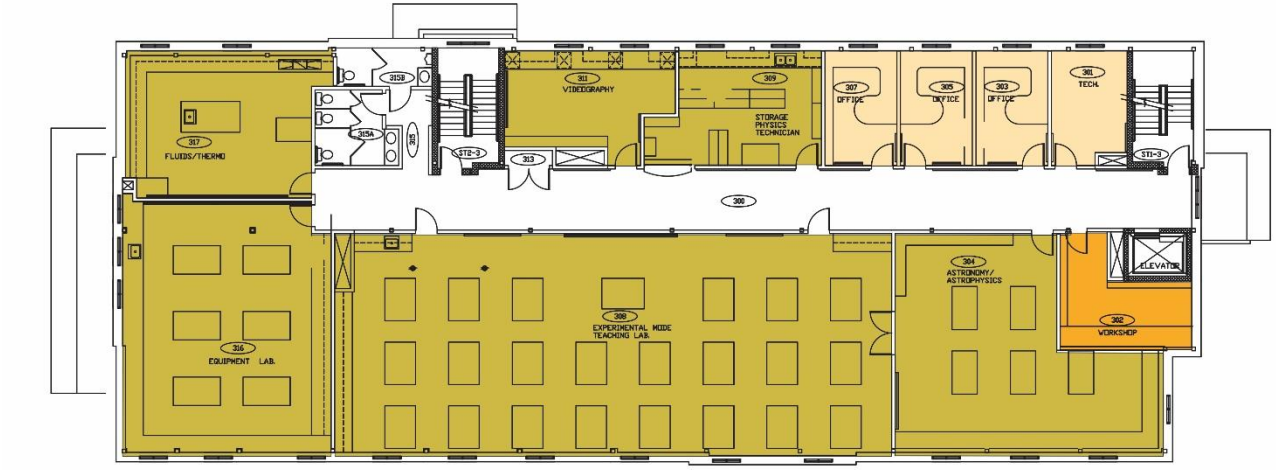
- Classroom Space
- Laboratory Space
- Research Space
- Learner Support
- Lounge/Informal Study
- Office Space
- Office Service Space
- Other Space
- Vacated Space

Level 200 – Second Floor

Legend

- Classroom Space
- Laboratory Space
- Research Space
- Learner Support
- Lounge/Informal Study
- Office Space
- Office Service Space
- Other Space
- Vacated Space

Level 300 – Third Floor



Level 400 – Fourth Floor

Legend

- Classroom Space
- Laboratory Space
- Research Space
- Learner Support
- Lounge/Informal Study
- Office Space
- Office Service Space
- Other Space
- Vacated Space

Flemington Building

Constructed in 1931

Gross floor area: 2,974 gsm (32,008 gsf)

Net assignable area: 1,893 nasm (20,374 nasf) as currently configured

Current use: biology laboratories, offices, and related support activities

Building Configuration and Fabric

A four-level structure: ground level and three floors above grade. The building is connected to the Barclay building at the basement and first levels via the greenhouse structure. These connections are not at grade.

Fit to Function Considerations

The building's plan, small floor plate and low floor-to-floor height limits its capacity to be upgraded to provide high-quality state-of-the-art laboratory spaces. Optimum uses of the buildings include small capacity classrooms, dry laboratories (those without requirements for complex mechanical building systems), offices and student study space. By providing improved circulation links to Barclay, the two buildings could be considered as a single entity, with uses and activities allocated on the basis of the best fit between uses and building characteristics.

Accessibility

The building is only accessible through the west entrance or via a ramp in the basement of the Barclay Building – the north and south entrances do not enter at grade. There is no elevator in the building.

Campus Planning Context

The building is located at the centre of campus and frames part of the main quadrangle. Its long-term potential is strengthened by its location next to the Barclay Building as the two buildings together form a hub for wet science. Future expansion northward may be possible; however, it would require relocating the President's Cottage.

Flemington Building Floor Plans

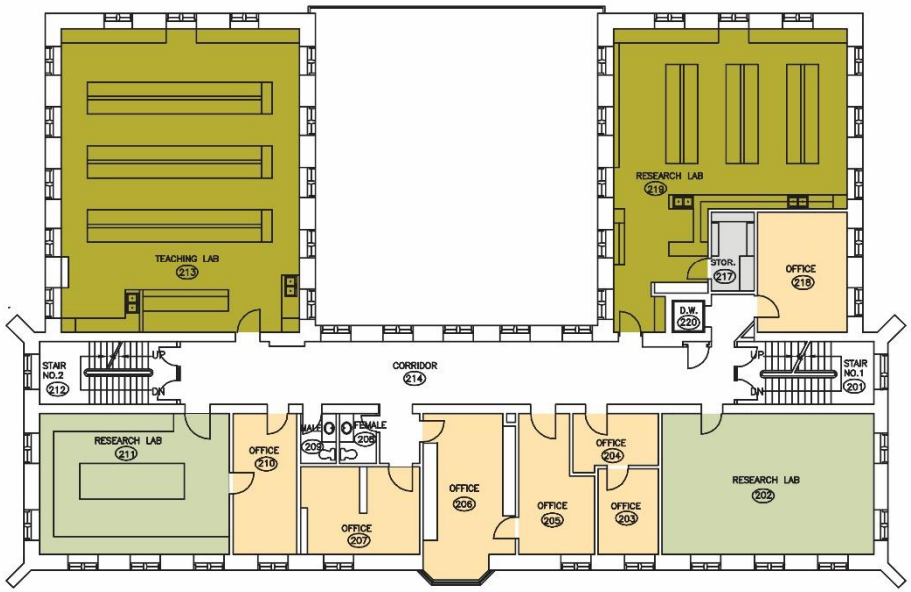
Level 000 – Main Floor

Legend

- Classroom Space
- Laboratory Space
- Research Space
- Learner Support
- Lounge/Informal Study
- Office Space
- Office Service Space
- Other Space
- Vacated Space

Level 100 – First Floor

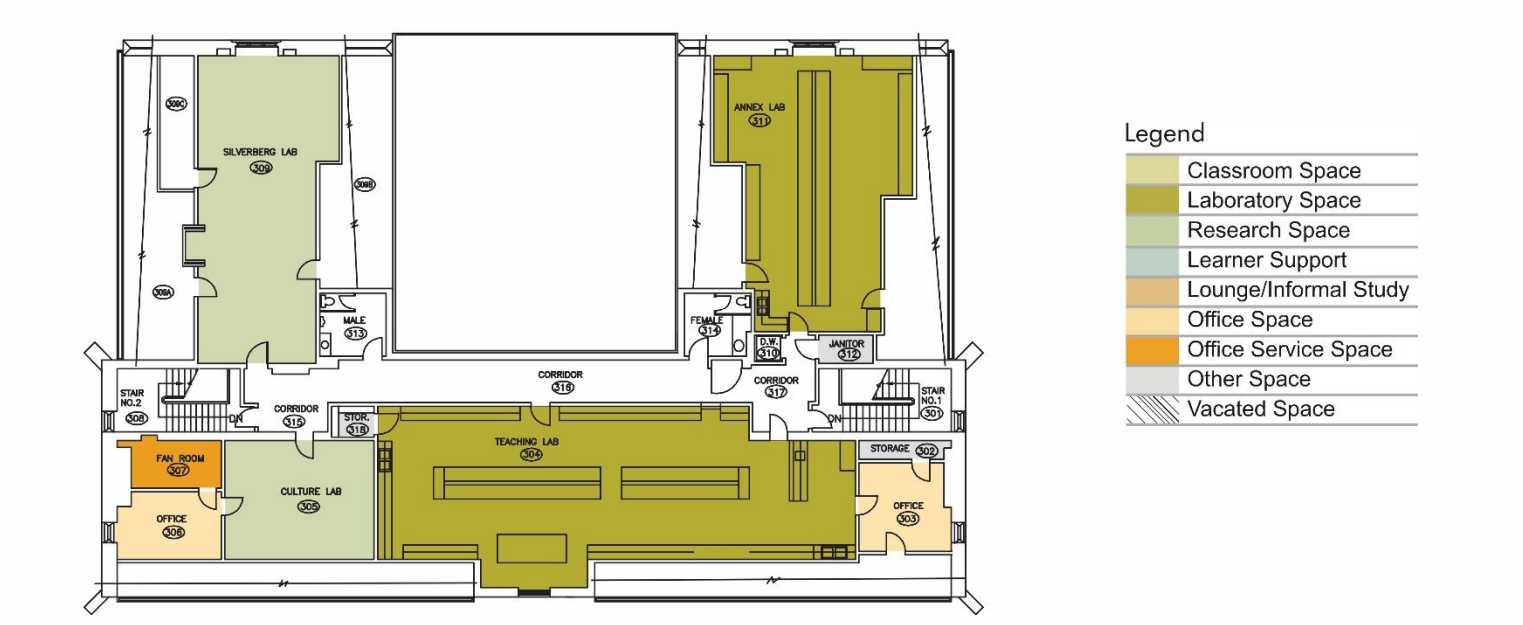
Level 200 – Second Floor



Legend

- Classroom Space
- Laboratory Space
- Research Space
- Learner Support
- Lounge/Informal Study
- Office Space
- Office Service Space
- Other Space
- Vacated Space

Level 300 – Third Floor



Gairdner Building

Constructed in 1965 to house fine arts disciplines

Gross floor area: 1,356 gsm (14,600 gsf)

Net assignable area: 931 nasm (10,020 nasf) as currently configured

Original use: fine art teaching studios, offices and related support activities

Building Configuration and Fabric

A three level structure - basement and two floors above grade - with a simple straightforward plan that provides two exit stairs leading from Level 200 to grade. The building is linked at the basement level through a common receiving and shipping area to the adjacent Owens Art Gallery.

A single stair provides access from the main entrance hall to the basement level (Level 000). A second exit from basement level is routed through the shared shipping and receiving area.

The structure is reinforced concrete. Exterior condition is assessed as "good" in the 1995 assessment completed by Arsenault Architects Ltd. Interior conditions are indicated as "fairly good". Existing interior finishes likely need to be replaced or substantially upgraded for any new use accommodated in the building. Similarly, most or all of the existing configuration will need to be altered to accommodate new uses.

Fit to Function Considerations

Wide span construction with top lit open spaces on Level 200 provides an opportunity to accommodate activities that require large open floor areas. Main level spaces are smaller in scale with lower clear internal height, but still provide a flexible floor plate that can accommodate a wide range of activity types. The basement level is less flexible. A revised configuration of the second exit may be required depending on proposed use. Almost any conceivable use will require adding an elevator, either within the existing structure or as an exterior addition.

Building Systems

Assessments of both mechanical and electrical systems in 1995 indicated substantial investments needed in upgrades to maintain the existing uses. Further upgrades were indicated for life safety and security systems. Configured to suit the current use as fine art teaching studios and related office activities, the building systems can be considered at the end of their useful life. A new use for the building will likely entail a complete redesign and replacement of the air distribution system. Similarly, the electrical system, both main infrastructure and the branch wiring, can be considered at the end of its useful life and will require a complete replacement irrespective of the intended use.

Accessibility

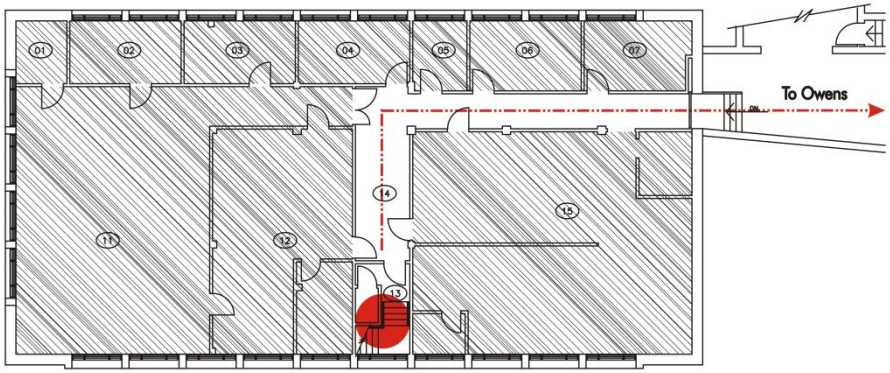
As noted, the building is not equipped with an elevator, restricting access for handicapped users as well as service for equipment, supplies, etc.

Campus Planning Context

The building occupies a key central campus location with the main entrance facing the major campus open space. It is contiguous with the Owens Art Gallery and adjacent to the Library. The site does not allow for expansion of the building footprint.

Gairdner Building Floor Plans

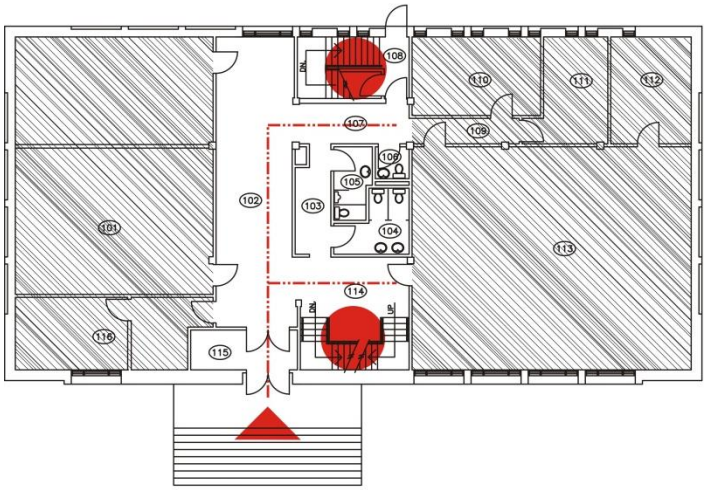
Level 000 – Basement



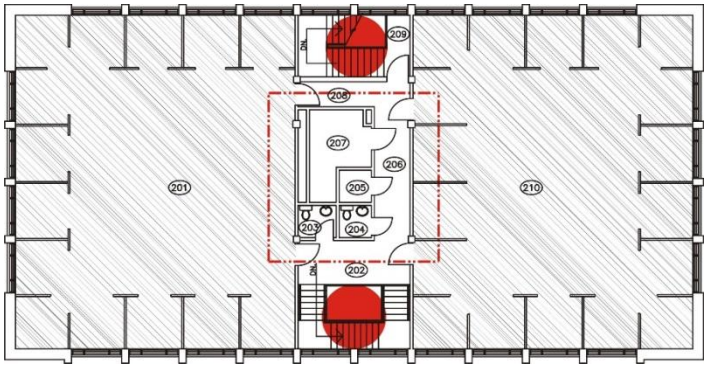
Legend

- Classroom Space
- Laboratory Space
- Research Space
- Learner Support
- Lounge/Informal Study
- Office Space
- Office Service Space
- Other Space
- Vacated Space

Level 100 – Main Floor



Level 200 – Second Floor



Legend

- Classroom Space
- Laboratory Space
- Research Space
- Learner Support
- Lounge/Informal Study
- Office Space
- Office Service Space
- Other Space
- Vacated Space

Avard-Dixon Building

Originally constructed in 1958 as an academic building; substantially rebuilt and expanded in 1994.

Gross floor area:	3,464 gsm (37,285 gsf)
Net assignable area:	2,030 nasm (21,850 nasf) as currently configured
Current use:	general purpose classrooms, research space, faculty offices and related support facilities

Building Configuration and Fabric

A four level structure: ground level and three floors above grade, the plan is configured with a double-loaded single corridor providing a flexible template suitable for a wide variety of uses.

The structure is reinforced concrete. Overall the interior and exterior fabric of the building is rated in excellent condition.

Fit to Function Considerations

The building provides a good standard model for a multipurpose academic building suitable for a range of uses and room sizes from medium capacity classrooms (up to 50 seats) to dry research space and office and office service functions. The available width between the corridor and the exterior wall restricts its use for large capacity classrooms. It has almost no building services suitable for wet laboratory teaching or research uses. Circulation stairs are narrow between Levels 000 and 100 for the building occupant load.

Building Systems

Existing mechanical systems are rated as adequate. Electrical systems require upgrading to meet current code requirements (Arsenault Architects Study '95).

Accessibility

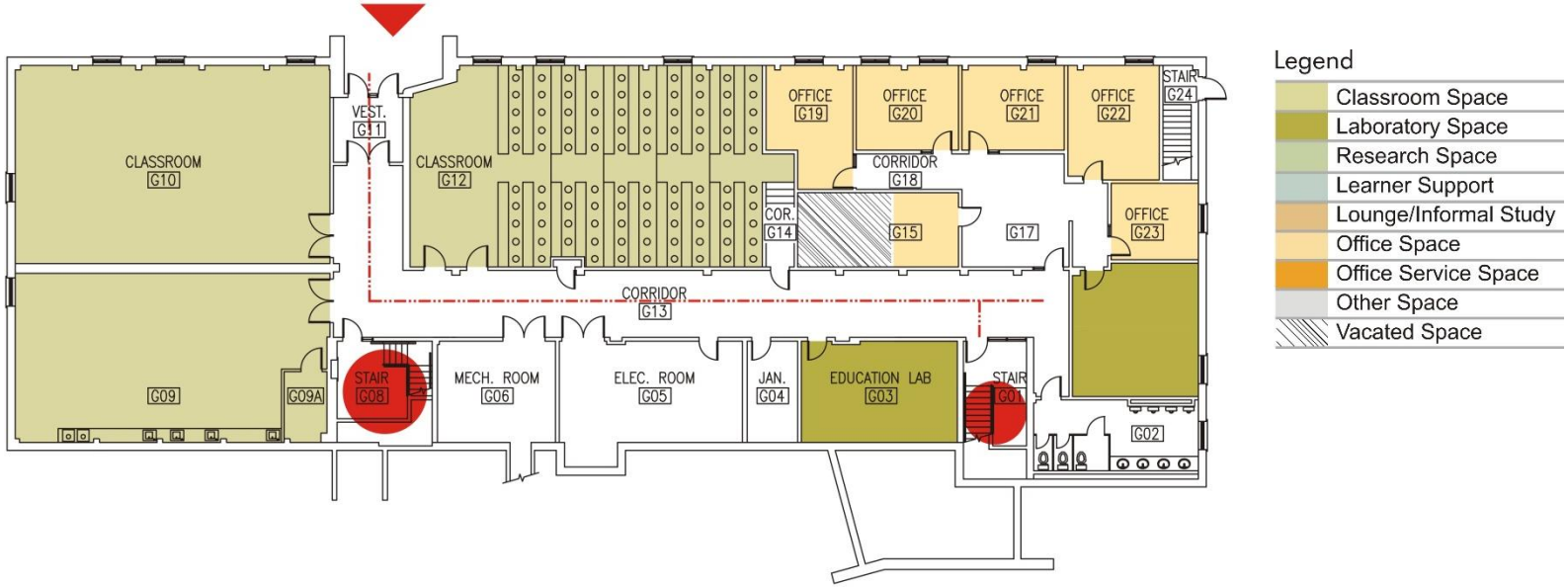
Handicapped access is available to Levels 000 (Ground floor) and 100 via separate entrances at each level. There is no elevator in the building.

Campus Planning Context

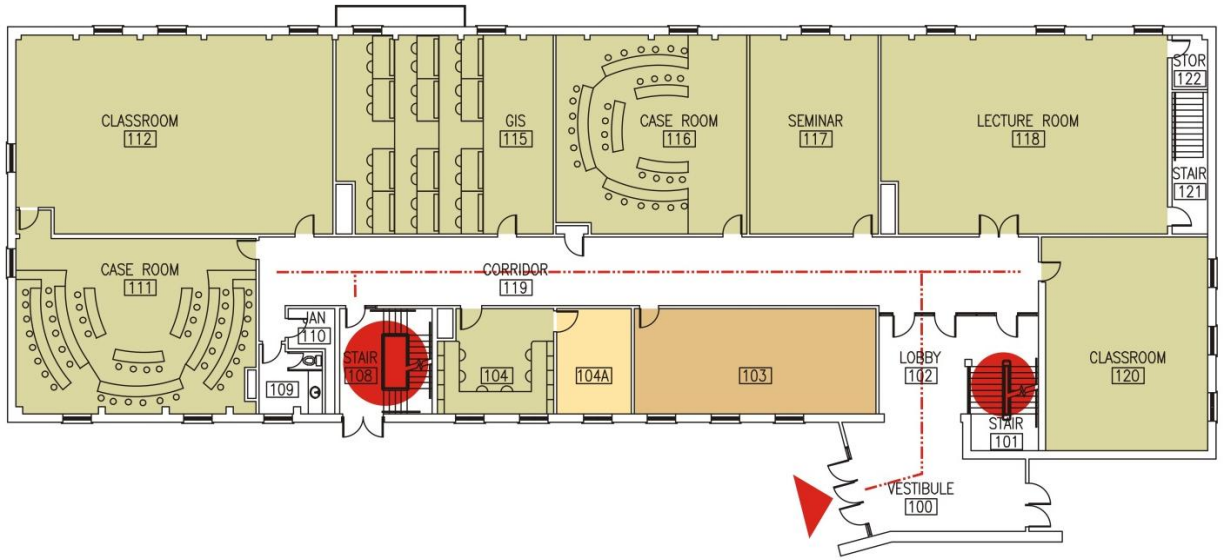
The building has a prominent location facing Main Street and is adjacent to the student housing complex across the street. As such, it provides a good location for shared classrooms and other common facilities and services. There is some capacity on the site to accommodate a westward expansion of the building.

Avard-Dixon Floor Plans

Level 000



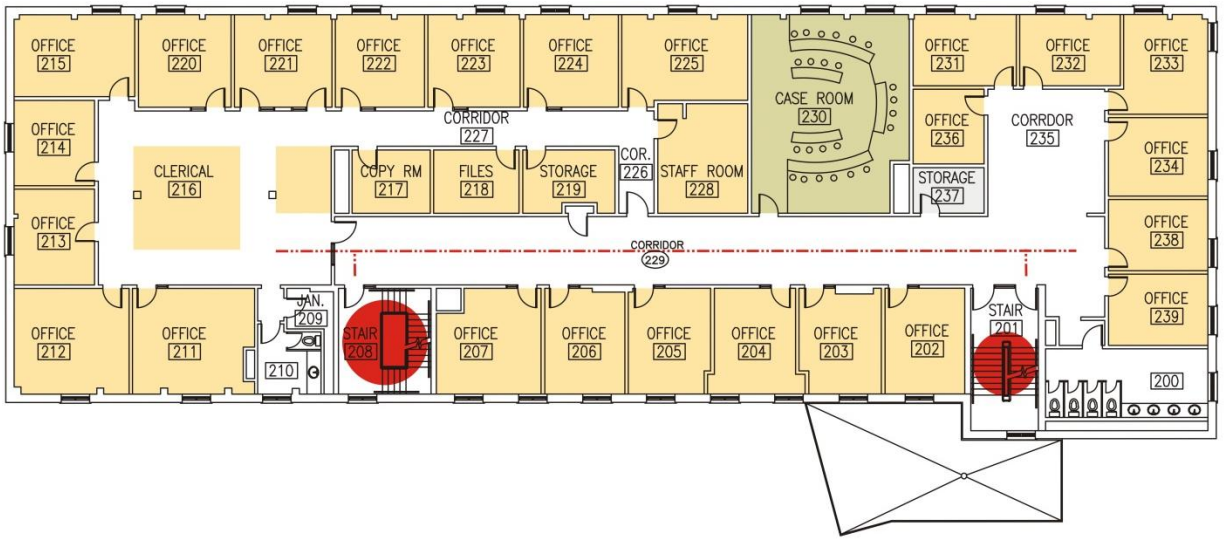
Level 100



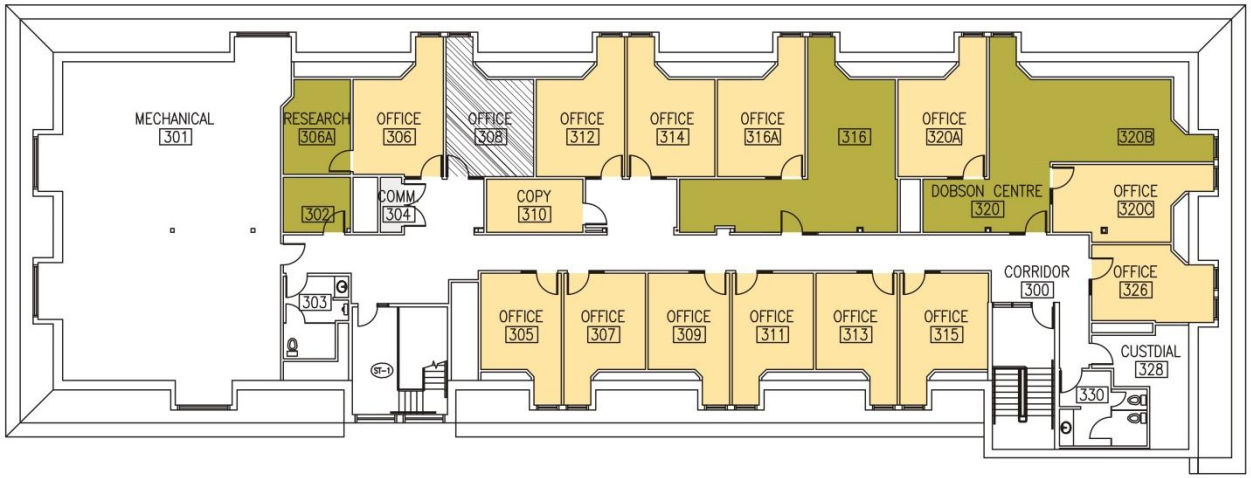
Legend

- Classroom Space
- Laboratory Space
- Research Space
- Learner Support
- Lounge/Informal Study
- Office Space
- Office Service Space
- Other Space
- Vacated Space

Level 200



Level 300



Legend

- Classroom Space
- Laboratory Space
- Research Space
- Learner Support
- Lounge/Informal Study
- Office Space
- Office Service Space
- Other Space
- Vacated Space

Crabtree Building

Originally constructed in 1979 with subsequent alterations and improvements to the Main floor instructional spaces, and some changes to room layouts on other levels.

Gross floor area:	4,043 gsm (43,504 gsf)
Net assignable area:	1,986 nasm (21,372 nasf)
Current use:	Basement and ground floor levels - animal quarters, Psychology department teaching and research space, shared classrooms Upper floors - instructional space, academic and administrative office and related office support facilities

Building Configuration and Fabric

A five level structure of reinforced concrete, the floor plan layout varies widely by level depending on the primary use. Main access to the building is at mid-level from the main campus courtyard. The basement level is contiguous with and connected to the lowest level of the Ralph Pickard Bell Library in the adjoining structure. Overall the interior and exterior fabric of the building is in good condition.

Fit to Function Considerations

Because of the varied activities on each level, appropriate use of the building varies by level:

- Basement floor has restricted accessibility because of floor level changes, no natural light, and is remote from other occupied areas of the building. These factors make the space inappropriate for instructional or office uses. It is more suitable for storage and similar functions, and given the connection to the Library space, provides a possible storage space for closed access Library collections.
- Ground floor houses animal quarters in space located under the portico. This area has been renovated and provides suitable accommodation.
- Main level accommodates large and small capacity teaching spaces. Access to two of the classrooms is restricted by an interior level change.
- Levels 200 & 300 provide good quality accommodation for small capacity instructional rooms, offices and office support functions.

Building Systems

No recent information is available on the status of the existing building systems. Renovated areas in the building – the main level and Level 200 have upgraded systems. The animal quarters have also been upgraded to a suitable standard.

Unrenovated areas in the basement and ground floors will require upgrades to building systems when these areas are reallocated and renovated for new uses.

Accessibility

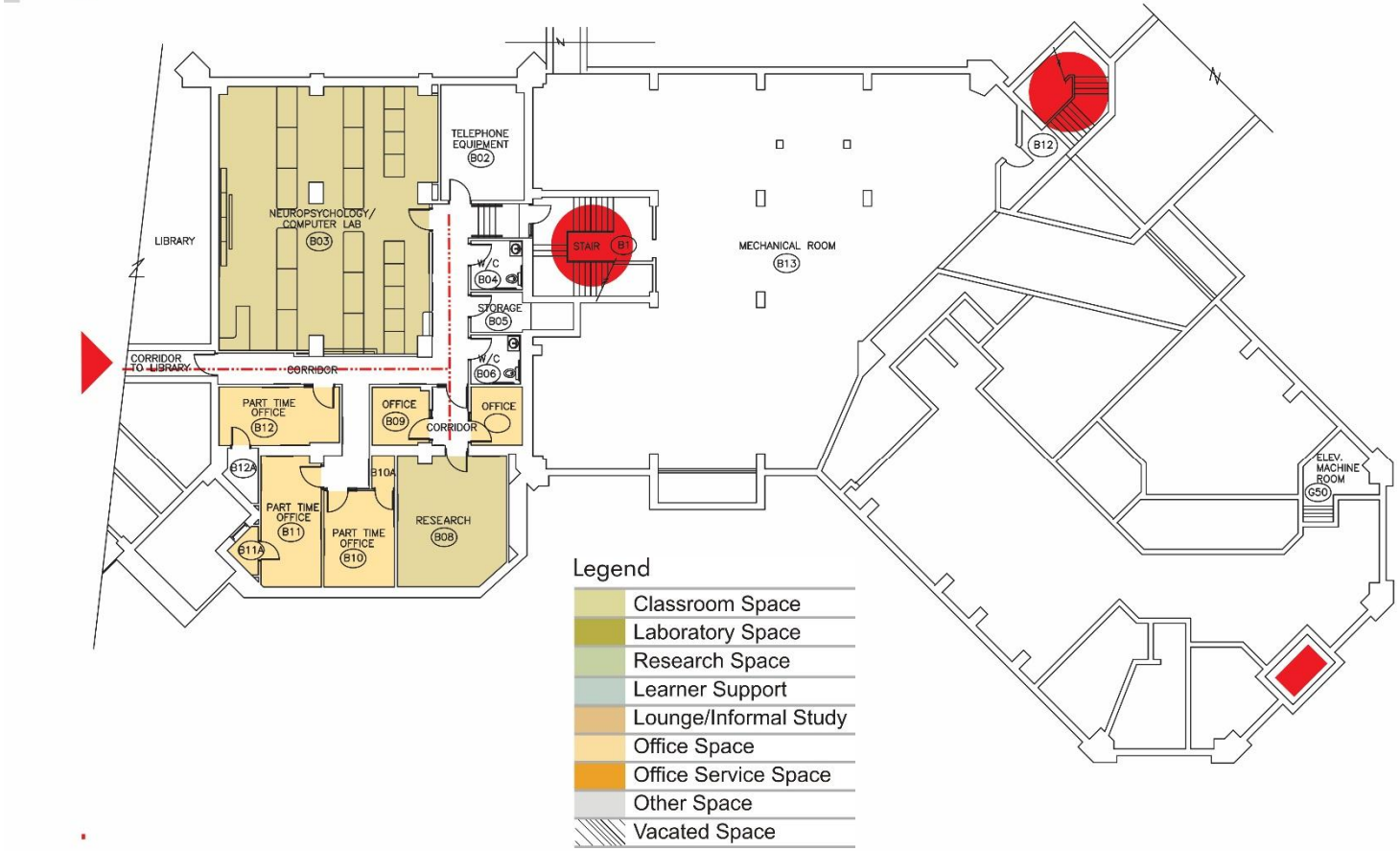
The basement level occupied space located under the open portico is accessible from the Library block. Ground floor accommodation is configured on 4 different levels connected by short flights of stairs. None of the occupied spaces are accessible from the Crabtree elevator. The large auditorium on the Main level is accessible – two classrooms are located on an elevated part of the floor. Levels 200 and 300 are fully accessible from the Crabtree elevator.

Campus Planning Context

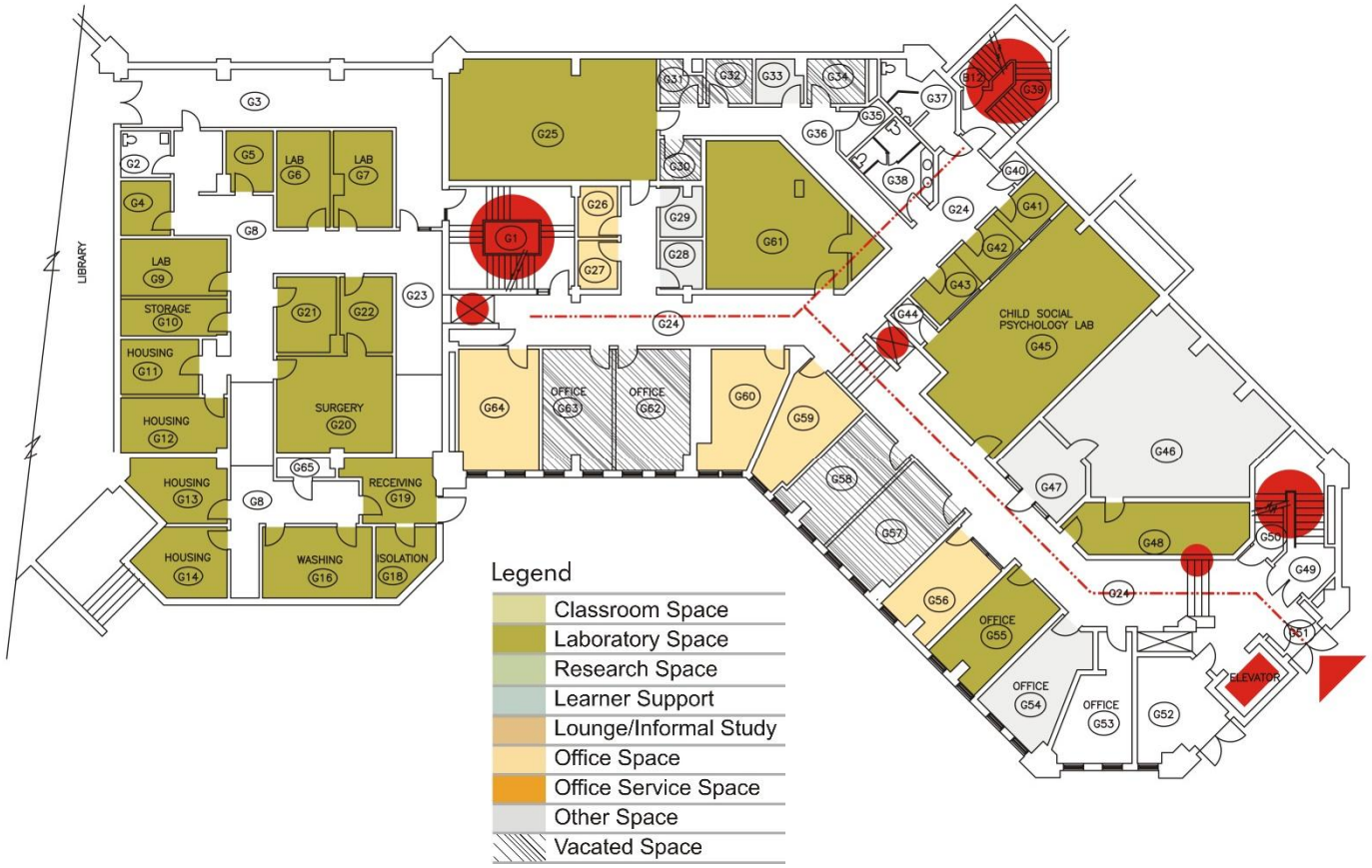
Crabtree is part of a key campus building complex with Bell Library facing the central campus open space. Its location makes it a suitable place to accommodate a wide variety of common services. It is not readily expandable to create a larger footprint although there may be a possibility of adding additional floors subject to structural assessment.

Crabtree Building Floor Plans

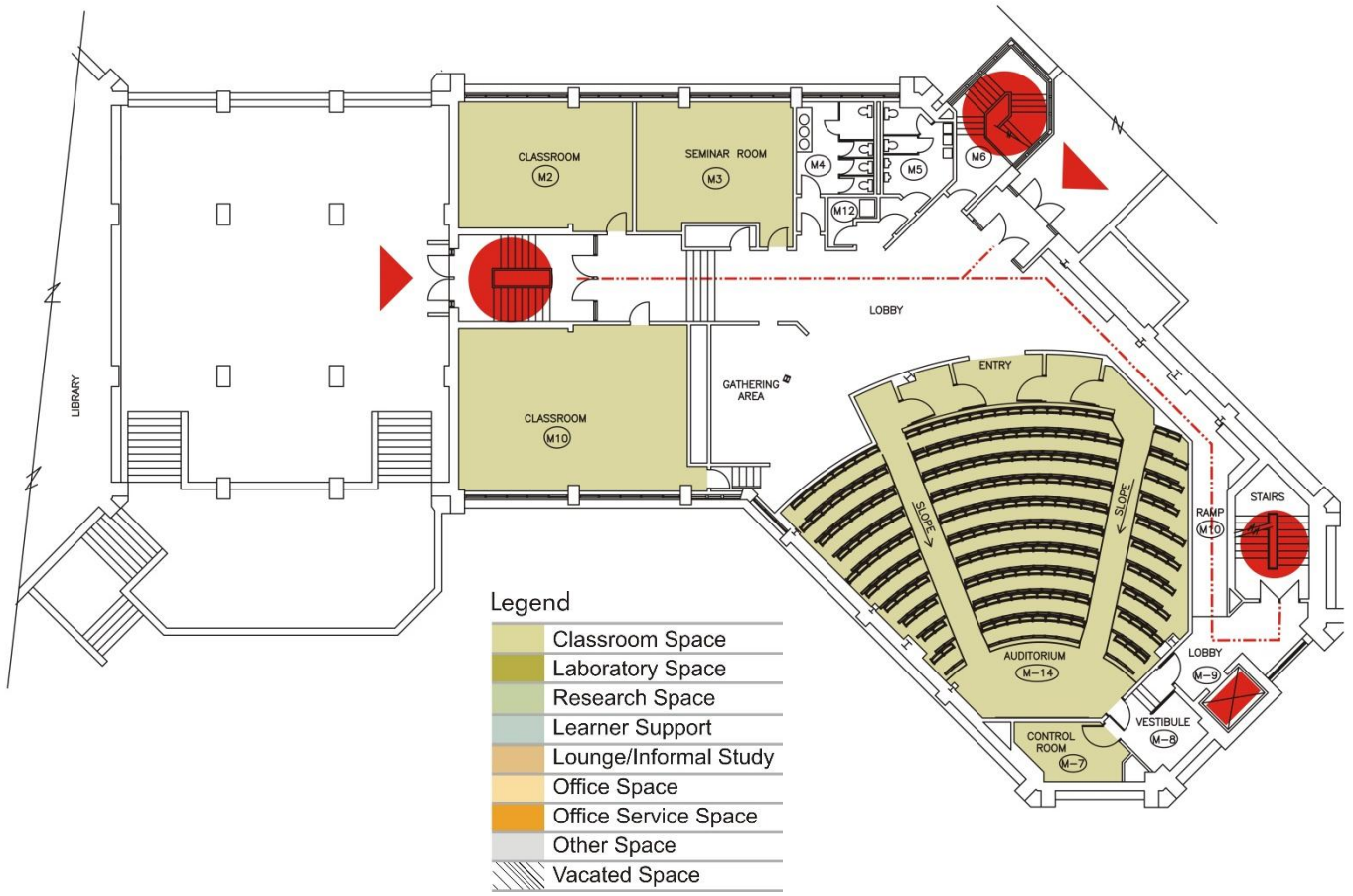
Level --100 Basement



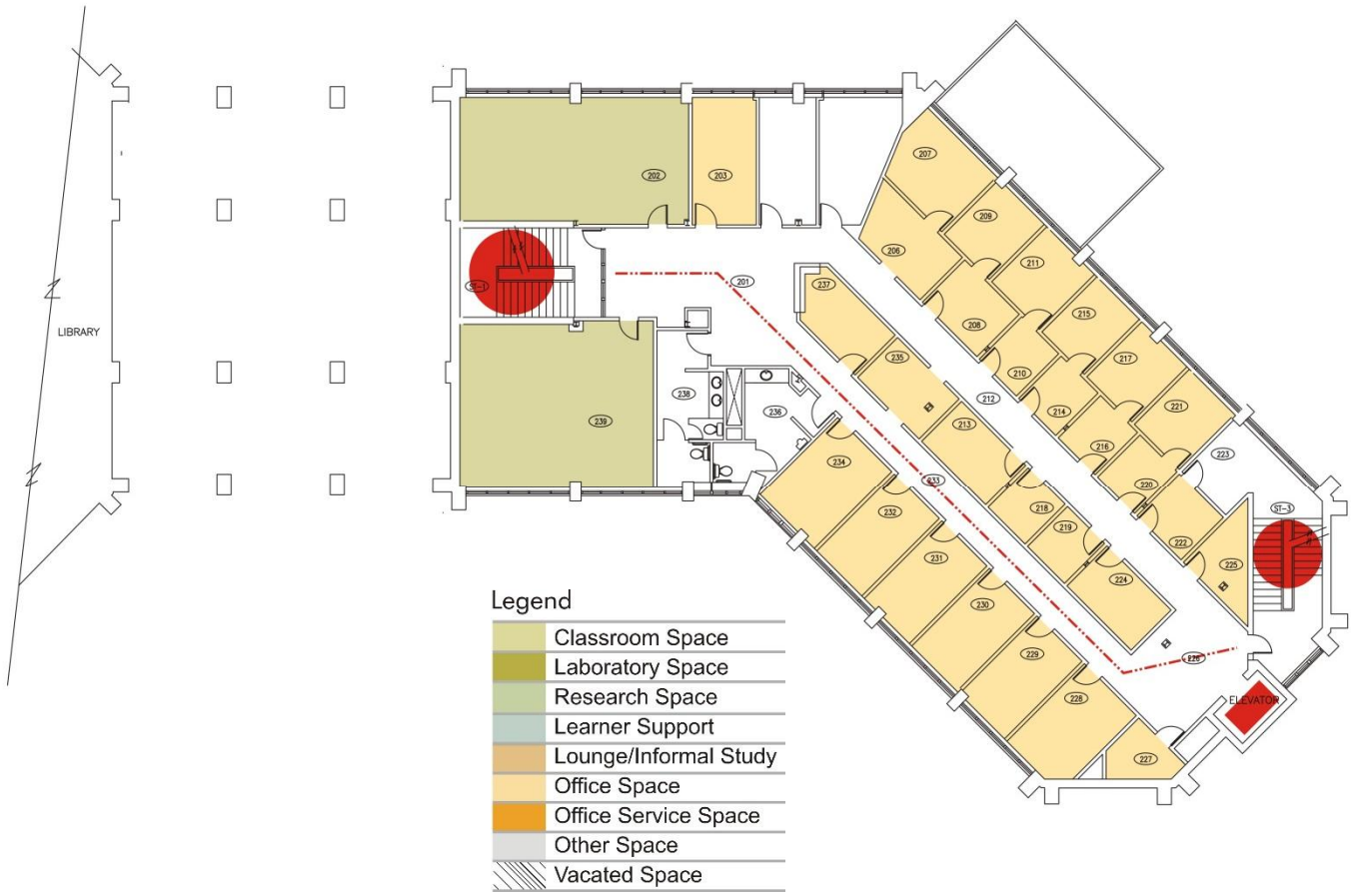
Level 000 – Ground Floor



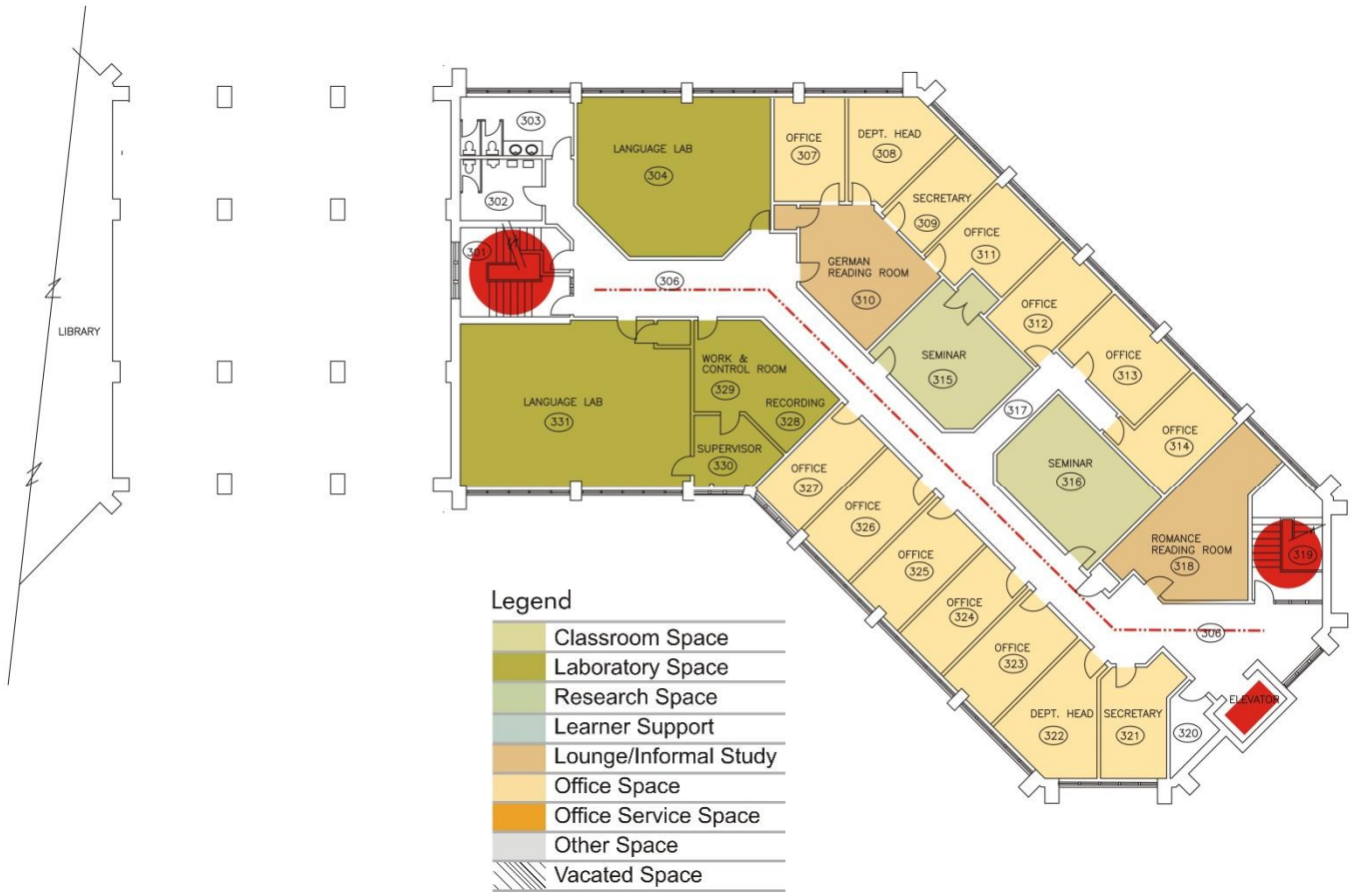
Level 100 – Main Floor



Level 200


LIBRARY
Legend
Classroom Space
Laboratory Space
Research Space
Learner Support
Lounge/Informal Study
Office Space
Office Service Space
Other Space
Vacated Space
ELEVATOR

Level 300


LIBRARY
303
LANGUAGE LAB
304
OFFICE
307
DEPT. HEAD
308
302
SECRETARY
309
OFFICE
311
GERMAN
READING ROOM
310
306
OFFICE
312
OFFICE
313
SEMINAR
315
WORK &
CONTROL ROOM
329
LANGUAGE LAB
331
RECORDING
328
317
OFFICE
314
SUPERVISOR
330
SEMINAR
316
OFFICE
327
OFFICE
326
ROMANCE
READING ROOM
318
319
OFFICE
325
OFFICE
324
308
OFFICE
323
ELEVATOR
DEPT. HEAD
322
SECRETARY
321
320
Legend
Classroom Space
Laboratory Space
Research Space
Learner Support
Lounge/Informal Study
Office Space
Office Service Space
Other Space
Vacated Space

Hart Hall

Originally constructed in 1910 as a student residence, and converted to academic use in 1965. The existing building as it stands is a remnant of an original structure with a larger footprint. Further major changes were made in 1972 when one wing was demolished, and a new entrance and new stair towers added to the building.

Gross floor area: 3,532 gsm (38,000 gsf)

Net assignable area: 1,851 nasm (19,922 nasf) as currently configured including an area of 600 nasm to be vacated (6,470 nasf)

Current use: Accommodation for small classrooms, studio spaces for fine art disciplines and academic offices and office support space for humanities departments.

Building Configuration and Fabric

A five level structure with basement and four floors above grade, the plan reflects its original use as a student residence. With subsequent renovation and repurposing, the interior plan has been altered to suit its primary use as an office building. Levels 200 to 400 retain most of the original floor layouts. Level 100 has been altered in part to create a large fine art studio. Level 000 – Basement - has had the most reconfiguration. The original gymnasium space has been converted to a sculpture studio. The swimming pool remains in place covered by a new floor. Both these spaces will be vacated.

A single stair provides access from the main entrance hall to the basement level. The second exit from basement level is direct to grade. Exit from all other levels is via a central stair (wood construction) within the original building and newer stair in the new addition. The west stair provides an interior link to the adjacent Chemistry building at multiple levels.

The building underwent a major renovation in 1983 that included changes to the floor plan, upgrades of insulation and interior finishes.

The structure is reported to be a mix of loadbearing masonry and wood construction. The 1999 Building Condition Report conducted by Arsenault Architects Ltd. reported that the structural design has the capacity to continue use as an academic building based on building code standards at that time.

The exterior envelope condition is assessed as “good” with recent investments in masonry repair, new windows, and new roofing.

Interior finishes are suitable for office use, but are not considered sturdy enough for the heavier use associated with teaching. Any new use of the vacated space that can utilize part or all of the existing configuration will require that existing finishes be substantially upgraded or replaced. New configurations will require all new finishes.

Fit to Function Considerations

The cellular nature of the original plan comprised of bedrooms with gang washrooms provides a suitable template for its current use as office spaces on Levels 100 through 400. The plan with double loaded corridors and a structural system that incorporates columns in the corridor partitions means that creating larger column-free spaces would require very substantial rebuilding of the structure.

All aspects of the building – structure, plan and a small floor plate – indicate that low density uses are most viable. The existing classrooms in the building are among the smallest in the University pool. The building as partitioned provides workspaces in single occupancy offices for approximately 50 persons. The net area allocated to offices is approximately 10,600 nasf which generates an average office size of 205 nasf per room compared to a common standard in new academic buildings of 140 nasf (13 nasm). Overall the ratio of assignable space to building gross floor area is an inefficient 52% assignable and 48% unassignable.

The building's age, inefficient plan and accessibility shortcomings argue for replacement. Accommodating the existing uses in new space would require an estimated gross floor area totalling approximately half of the existing building area. The optimum use of the building as it is configured is for academic offices and similar low density uses. The space being vacated by fine arts activities can provide expansion space for contiguous academic units if there is a need. With any reuse, a new service core will be required to accommodate a passenger elevator serving all levels.

Building Systems

Systems in building areas occupied by fine arts studio uses will require replacement and reconfiguration to suit a new use. Mechanical systems in the remainder of the building are rated as adequate. Electrical systems require upgrading to meet code requirements (Arsenault Architects Study '95). Provision for washrooms will need to be assessed to suit the recommended use. New washrooms should be considered for inclusion in any substantial renovation of the building. Further building systems upgrades to life safety and security systems will likely be required.

Accessibility

Handicapped access is provided to the entrance level only by an exterior ramp that leads to a secondary entrance. An elevator shaft was created during the 1972 renovation but no equipment has been installed.

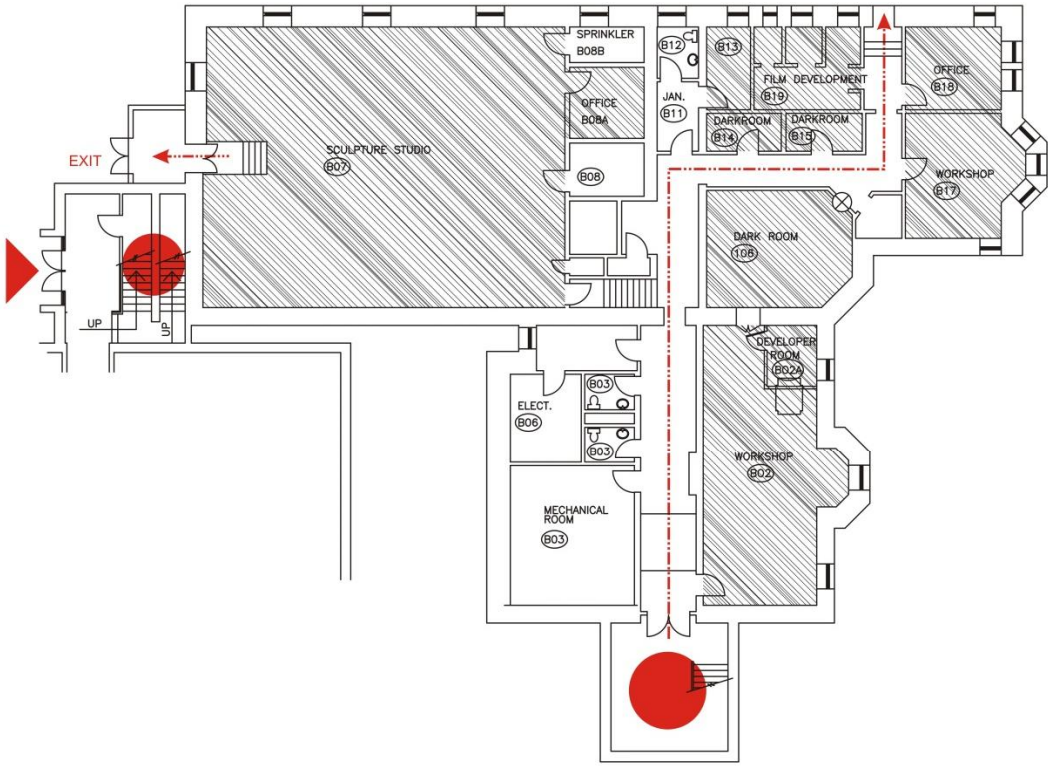
Campus Planning Context

The building, as it is sited, enjoys an uneasy relationship with the Barclay Chemistry Building. Its configuration wrapping around Barclay's north-east corner restricts the potential for expansion of Barclay to address any future requirement for additional science teaching and research laboratory space.

The 1972 stair tower and entrance faces the central campus open space.

Hart Hall Floor Plans

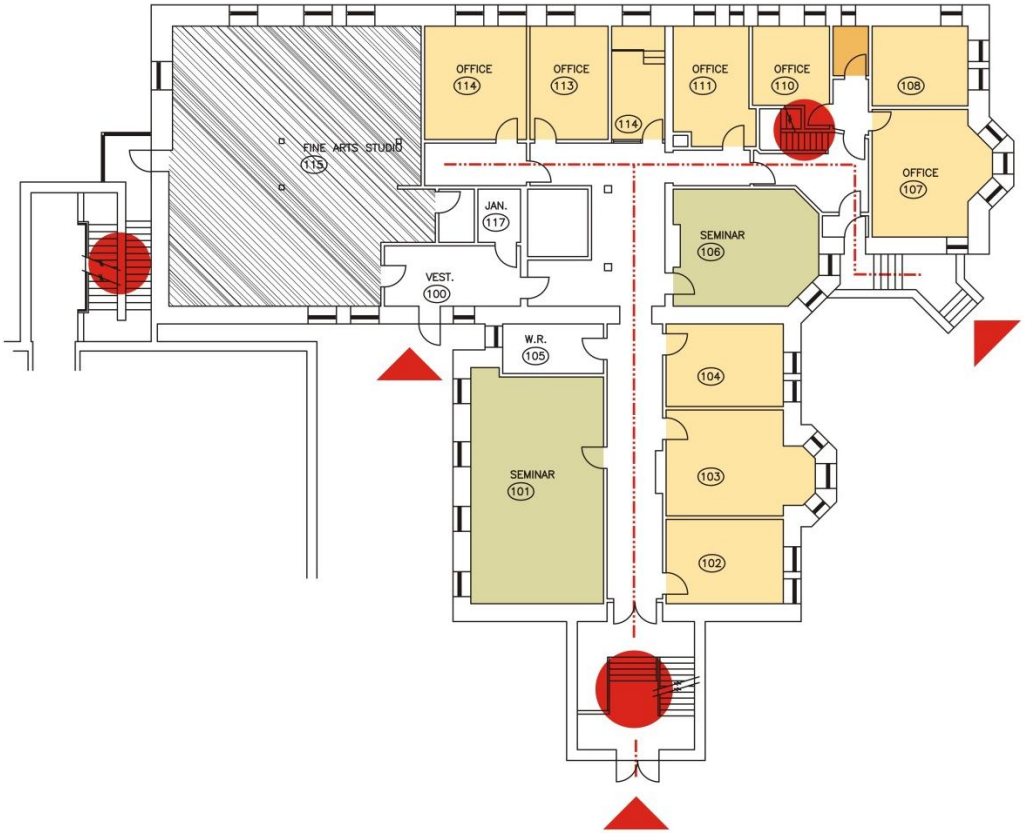
Level 000 – Basement Floor



Legend

- Classroom Space
- Laboratory Space
- Research Space
- Learner Support
- Lounge/Informal Study
- Office Space
- Office Service Space
- Other Space
- Vacated Space

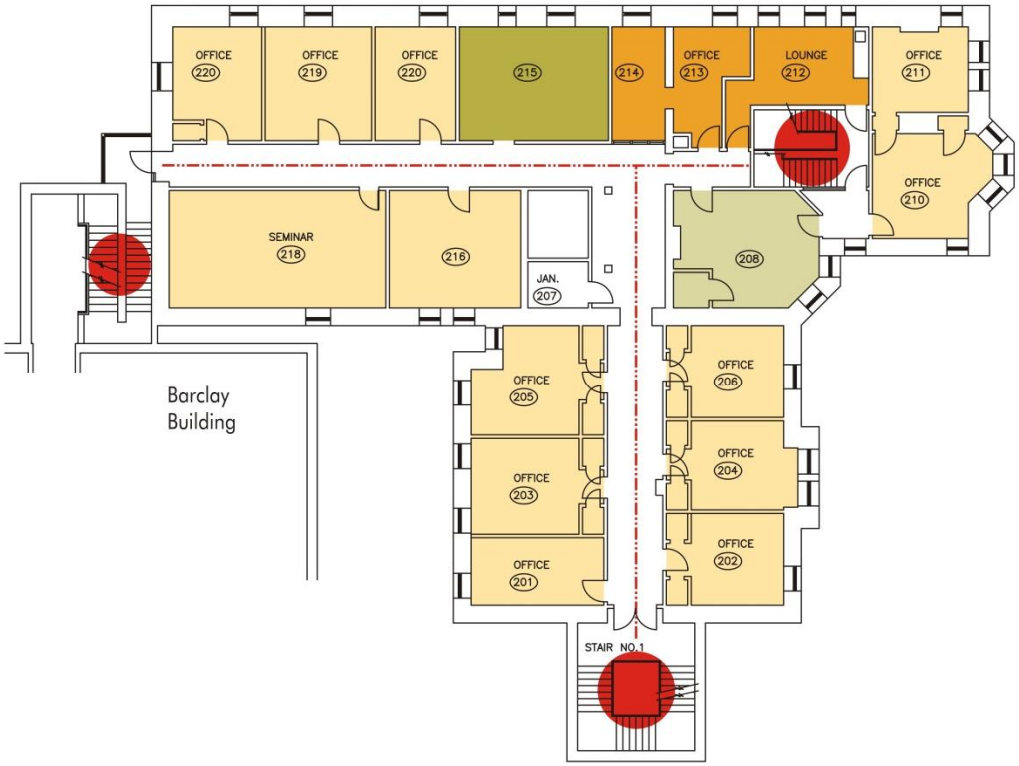
Level 100 – Main Floor



Legend

- Classroom Space
- Laboratory Space
- Research Space
- Learner Support
- Lounge/Informal Study
- Office Space
- Office Service Space
- Other Space
- Vacated Space

Level 200 – Second Floor



Legend

- Classroom Space
- Laboratory Space
- Research Space
- Learner Support
- Lounge/Informal Study
- Office Space
- Office Service Space
- Other Space
- Vacated Space

Level 300 – Third Floor

Legend

- Classroom Space
- Laboratory Space
- Research Space
- Learner Support
- Lounge/Informal Study
- Office Space
- Office Service Space
- Other Space
- Vacated Space

Level 400 – Fourth Floor

Legend

- Classroom Space
- Laboratory Space
- Research Space
- Learner Support
- Lounge/Informal Study
- Office Space
- Office Service Space
- Other Space
- Vacated Space

Building Gross and Assignable Area Summary

	Barclay	Dunn	Flemington	Ralph Pickard Bell Library	Gairdner	Avard-Dixon	Crabtree	Hart	Area Totals
Net Assignable Area									
NASM	3,159	2,152	1,893	4,695	931	2,030	1,986	1,851	18,697
NASF	34,003	23,168	20,374	50,540	10,020	21,850	21,370	19,920	201,253
Gross Floor Area									
GSM	5,375	3,359	2,974	7,083	1,356	3,464	4,043	3,532	31,186
GSF	57,856	36,154	32,008	76,243	14,600	37,285	43,504	38,000	335,650
Assignable %	59%	64%	64%	66%	69%	59%	49%	52%	60%
Vacated area (nasm)	-	-	-		940	-	-	600	1,540

Note:
Net assignable space includes all areas that accommodate core institutional activities.
Non-assignable space (gross floor area) includes service areas such as stairs, corridors and elevators, washrooms, custodial space, enclosed building systems spaces, structural elements and exterior walls.

Section 5: Space Requirements

To guide the planning options, space requirements have been developed for classrooms, academic units, and related activities that occupy space in the buildings being considered.

Teaching Space

Classrooms

Room Name	Cap.	Area per Station	Room Area	# of Rooms	# of Stations	Net Assignable Area (nasm)	Net Assignable Area (nasf)
Classroom – 12 Seats	12	2.8	33	4	48	132.0	1,420
Classroom – 24 Seats	24	2.5	60	4	96	240.0	2,582
Classroom – 36 Seats	36	2.0	72	6	216	432.0	4,648
Classroom – 48 Seats	48	1.9	88.8	2	96	177.6	1,911
Classroom – 60 Seats	60	1.9	111	2	120	222.0	2,389
Classroom – 72 Seats	72	1.8	126	2	144	252.0	2,712
Classroom – 96 Seats	96	1.7	158.4	1	96	158.4	1,704
Classroom – 144 Seats	144	1.5	216	1	144	216.0	2,324
Classroom – 180 Seats	180	1.5	270	1	180	270.0	2,905
Classroom – 212 Seats	212	1.3	318	1	212	318.0	3,422
Total Area				**24**	**1,352**	**2,418.0**	**26,017**

Research Space

For research space, COU has developed a series of standards based on the types of research activity carried out by different disciplines. Types range from wet bench activities in the biological sciences, dry bench activities in the physical sciences such as physics or geology, computational-based projects and office based work typical in the arts, humanities and some social sciences. The standards are driven by actual practice observed in the universities and represent broad averages of the amount of space that a principal investigator or researcher requires to accommodate their work. The standards are not meant as an entitlement but rather as a space budget for the research enterprise that can be allocated on the basis of demonstrated need.

For disciplines accommodated in the primarily academic buildings:

- Biology
  For each principal investigator bench space of **85 nasm** (915 nasf). The existing inventory of research space allocated to Biology is 680.5 nasm between the Flemington and Barclay buildings for an average of 68 nasm per PI.

- Chemistry & Biochemistry
  For each principal investigator bench space of **85 nasm** (915 nasf). The existing inventory of research space allocated to Chemistry and Biochemistry is 956 nasm in the Barclay building for an average of 106.2 nasm per PI.
- Physics
  For each principal investigator bench space of **50 nasm** (540 nasf). The existing inventory of research space allocated to Physics is 268 nasm in the Dunn building for an average of 53.6 nasm per PI.
- Mathematics & Computer Science
  For each principal investigator a work area of **5 nasm** (50 nasf). The existing inventory of dedicated research space allocated to Math and Computer Science is 29.5 nasm in the Dunn building for an average of 3.7 nasm per PI. As much faculty research is desk and office based in nature, additional research space is generally only required for research staff.
- Psychology
  For each principal investigator a work area of **30 nasm** (325 nasf) with additional workspace for research staff. The existing inventory of research space allocated to Psychology is 230 nasm. Currently, 3 faculty members conduct their research in space on the basement and ground floor levels of Crabtree. The rest of the faculty have research space on Level 200 with an average area of 7.5 nasm. For planning purposes, the existing inventory area has been carried in the Functional Space Program.
- Geography & Environment
  For each principal investigator a work area of **10 to 20 nasm** depending on the nature of the work with additional space for research staff. Based on the current faculty complement, an allocation of 15 nasm per full-time faculty is included in the allocations.
- Disciplines in humanities and social sciences
  An allocation of **1 nasm** per Faculty member to establish a pool of space useable for research projects that cannot be accommodated in staff offices.

An allowance for lab support space is included at 20% of the total lab area. Support space will accommodate incubators, autoclave, wet and dry storage, etc. as well as workstations for research staff.

In all cases, both research space per principal investigator and support space are not meant as entitlements but rather serve as a pool of space that can be allocated for a limited time period on the basis of demonstrated need.

Resource Rooms

- COU categorizes space that houses special collections and related facilities such as the J.E.A Crake Reading Room as office service space, a category which also includes meeting rooms. Space is allocated as an additional 25% of the area generated for academic and administrative office space.
  The space requirements developed here assume that if the Faculty is accommodated in a new location or in renovated space, the existing arrangement of having several separate reading and seminar rooms managed by academic departments would not be replicated. Instead, shared space is included in the space allocation to provide accommodation for meetings, small seminars, and student study that is capable of accommodating Faculty resource collections.

Office Space

- Academic offices - Private offices for full-time faculty; shared workstations for part-time instructors; hotelling stations for adjuncts, visitors, and other staff categories.
- Administrative office space and shared office support spaces - Private offices or workstations for administrative staff.
- Allocations for meeting rooms and office support spaces such as copy and office work rooms, kitchenettes and social space, storage, etc.

Student Study Space

- COU provides campus-wide allocations for student study space that may be located in a library or elsewhere on campus, excluding study space in residences.

Space Allocation Standards

Category/Space type		Area per workstation or office (nasm)
Office Space		
Reception/Waiting – Area allowance	Open office area	15.0
Dean	Private office	20.0
Department Head	Private office	13.0 to 18.0
Faculty – full-time	Private office	13.0
Other full-time academic appointment – PDF's	Private office	6.5
Faculty – part-time	Workstation – Shared access	6.5
Other academic appointments – adjuncts, visitors, etc.	Access to shared hotelling workstations	6.5
Administrative staff – Co-ordinators, etc.	Private office	9.0
Administrative staff – Secretarial	Workstation	6.5
Allowance for photocopy/storage – shared use		9.0

Space Requirements by Faculty and Department

Faculty of Science – Barclay Occupants – Chemistry/Biochemistry Department

Academic Unit	Space Category	Room Name	Cap.	Area per Station	Room Area	# of Rooms	Net Assignable Area (nasm)	Net Assignable Area (nasf)
Chemistry/ Biochemistry	Instructional space	Chemistry Wet Laboratory	32	6	192.0	4	768.0	8,267
		Biochemistry Wet Laboratory	24	6	144.0	1	144.0	1,549
		Lab Support @ 15% of Lab Area	n/a	n/a	n/a	n/a	136.8	1,472
	Research Space	Principal Investigator Wet Bench	1	85.0	85.0	9	765.0	8,231
		Lab Support @ 20% of Lab Area	n/a	n/a	n/a	1	180.4	1,941
	Office Space	Reception/Waiting	n/a	n/a	15.0	1	15.0	161
		Department Head's Office	1	18	18.0	1	18.0	194
		Academic Office - Faculty FT	1	13	13	8	104.0	1,119
		Academic Office – Research Associate/PDF/etc.	1	6.5	6.5	2	13.0	140
		Technician's Workroom	1	9	9	4	36.0	387
		Machinist's Workroom	1	9	9	1	9.0	97
		Administrative Office – Laboratory Manager	1	9	9	1	9.0	97
		Administrative Workstation	1	6.5	6.5	2	13.0	140
Total Area							**2,211.2**	**23,792**

Faculty of Science – Flemington Occupants – Biology Department

Academic Unit	Space Category	Room Name	Cap.	Area per Station	Room Area	# of Rooms	Net Assignable Area (nasm)	Net Assignable Area (nasf)
Biology	Instructional space	Biology Wet Laboratory	48	3.5	168	1	168.0	1,808
		Biology Wet Laboratory	32	3.5	112	1	112.0	1,205
		Microbiology Laboratory	24	3.5	84	1	84.0	904
		Ecology Laboratory	32	3.5	112	1	112.0	1,205
		Lab Support @ 15% of Lab Area	n/a	n/a	n/a	n/a	71.4	768
	Research Space	Principal Investigator Wet Bench	1	85.0	85.0	10	850.0	9,146
		Lab Support @ 20% of Lab Area	n/a	n/a	n/a	1	170.0	1,829
	Office Space	Reception/Waiting	n/a	n/a	15.0	1	15.0	161
		Department Head's Office	1	18.0	18.0	1	18.0	194
		Academic Office - Faculty FT	1	13.0	13.0	9	117.0	1,259
		Academic Office – Research Associate/PDF/etc.	1	6.5	6.5	2	13.0	140
		Technician's Workroom	1	9.0	9.0	1	9.0	97
		Other Academic Appointments - hotelling workstation	1	6.5	6.5	4	26.0	280
		Administrative Workstation	1	6.5	6.5	2	13.0	140
Total Area							**1,778.4**	**19,136**

Faculty of Science – Flemington/Barclay Occupants – Shared Space

Academic Unit	Space Category	Room Name	Cap.	Area per Station	Room Area	# of Rooms	Net Assignable Area (nasm)	Net Assignable Area (nasf)
Shared Space	Office Space	Meeting Room	10	2.5	25.0	2	50.0	538
		Photocopy/Storage	n/a	n/a	9	1	9.0	97
Total Area							**59.0**	**635**

Faculty of Science – Dunn Occupants – Math and Computer Science

Academic Unit	Space Category	Room Name	Cap.	Area per Station	Room Area	# of Rooms	Net Assignable Area (nasm)	Net Assignable Area (nasf)
Math and Computer Science	Instructional space	Math and CS Computer Lab	44	3	132.0	1	132.0	1,421
		Math and CS Computer Lab	14	3	42.0	1	42.0	452
		Lab Support @ 15% of Lab Area	n/a	n/a	n/a	n/a	26.1	281
	Research Space	Allowance	n/a	n/a	n/a	n/a	48.0	516
	Office Space	Department Head's Office	1	18	18.0	1	18.0	194
		Academic Office - Faculty FT	1	13	13	7	91.0	979
		Academic Office – Research Associate/PDF/etc.	1	6.5	6.5	1	6.5	70
		Technician's Workroom	1	9	9	3	27.0	291
		Photocopy/Storage	n/a	n/a	9.0	1	9.0	97
Math / Computer Science sub-total							399.6	4,300
Physics	Instructional Space	Physics Laboratory - 40 Stations	40	3	120	2	240.0	2,582
		Physics Laboratory - 32 Stations	32	4	128	1	128.0	1,377
		Fluids/Thermo Laboratory	25	n/a	50	1	50.0	538
		Lab Support @ 15% of Lab Area	n/a	n/a	n/a	n/a	62.7	675
	Research Space	Principal Investigator Allowance	n/a	n/a	n/a	n/a	250.0	2,690
		Lab Support @ 20% of Lab Area	n/a	n/a	n/a	n/a	50.0	538
	Office Space	Department Head's Office	1	18	18.0	1	18.0	194
		Academic Office - Faculty FT	1	13	13	4	52.0	560
		Technician's Workroom	1	9	9	1	9.0	9.0
		Photocopy/Storage	n/a	n/a	9.0	1	9.0	97
Physics sub-total							868.7	9,347
Shared Space	Office Space	Reception/Waiting	n/a	n/a	15.0	1	15.0	161
		Administrative Workstation	1	6.5	6.5	1	6.5	70
		Meeting Room	10	2.5	25.0	1	25.0	269
		Other Academic Appointments - hotelling workstation	1	6.5	6.5	2	13.0	140
Shared Space sub-total							59.5	640
Total Area							**1,327.8**	**14,287**

Faculty of Science – Crabtree Occupants – Psychology Department

Academic Unit	Space Category	Room Name	Cap.	Area per Station	Room Area	# of Rooms	Net Assignable Area (nasm)	Net Assignable Area (nasf)
Psychology	Instructional space	Neuro-psychology Computer lab	20	3	60.0	1	60.0	646
	Research Space	Allowance	n/a	n/a	n/a	n/a	230.0	2,475
	Office Space	Reception/Waiting	n/a	n/a	15.0	1	15.0	161
		Department Head's Office	1	18	18.0	1	18.0	194
		Academic Office - Faculty FT	1	13	13.0	9	117.0	1,259
		Technician's Workroom	1	9	9.0	3	27.0	291
		Administrative Workstation	1	6.5	6.5	1	6.5	70
		Photocopy/Storage	n/a	n/a	9.0	1	9.0	97
Psychology sub-total							482.5	5,192
Faculty Shared Space	Office Space	Meeting Room	10	2.5	25.0	1	25.0	269
Shared Space sub-total							25.0	269
Total Area							**507.5**	**5,461**

Faculty of Arts - Hart Hall Occupants

Academic Unit	Space Category	Room Name	Cap.	Area per Station	Room Area	# of Rooms	Net Assignable Area (nasm)	Net Assignable Area (nasf)
Canadian Studies	Office Space	Department Head's Office	1	13	13.0	1	13.0	140
		Academic Office - Faculty FT	1	13	13.0	3	39.0	420
		Academic Office - PDF	1	6.5	6.5	2	13.0	140
Canadian Studies Total							65.0	699
Classics	Office Space	Department Head's Office	1	13	13.0	1	13.0	140
		Academic Office - Faculty FT	1	13	13.0	2	26.0	280
Classics Total							39.0	420
English	Office Space	Department Head's Office	1	13	13.0	1	13.0	140
		Academic Office - Faculty FT	1	13	13.0	7	91.0	980
		Administrative Workstation	1	6.5	6.5	1	6.5	70
English Total							110.5	1,189
History	Office Space	Department Head's Office	1	13	13.0	1	13.0	140
		Academic Office - Faculty FT	1	13	13.0	7	91.0	980
History Total							104.0	1,119
Philosophy	Office Space	Department Head's Office	1	13	13.0	1	13.0	140
		Academic Office - Faculty FT	1	13	13.0	3	39.0	420
Philosophy Total							52.0	560
Religious Studies	Office Space	Department Head's Office	1	13	13.0	1	13.0	140
		Academic Office - Faculty FT	1	13	13.0	3	39.0	420
Religious Studies Total							52.0	560
Office Service Allowance		Meeting Rooms/Printer/Copier	-	-	-	-	60.0	645
Office Service Allowance Total							60.0	645
Total Area							**482.5**	**5,192**

Faculty of Arts - Crabtree Building Occupants

Academic Unit	Space Category	Room Name	Cap	Area per Station	Room Area	# of Rooms	Net Assignable Area (nasm)	Net Assignable Area (nasf)
Modern Languages & Literatures	Instructional	Media Lab	See library computer workstations					
	Office Space	Reception/Waiting	n/a	n/a	15.0	1	15.0	161
		Department Head's Office	1	13	13.0	1	13.0	140
		Academic Office - Faculty FT	1	13	13.0	9	117.0	1,259
		Administrative Office – Language Lab Director	1	13	13.0	1	13.0	140
		Administrative Workstation	1	6.5	6.5	1	6.5	70
		Photocopy/Storage	n/a	n/a	9.0	1	9.0	97
Total Area							**173.5**	**1,867**

Faculty of Arts Shared Space

Academic Unit	Space Category	Room Name	Cap	Area per Station	Room Area	# of Rooms	Net Assignable Area (nasm)	Net Assignable Area (nasf)
Shared	Research Space	Research Workspace - workstations	n/a	n/a	n/a	n/a	50.0	538
	Resource Room(s)	Reading/Study Rooms	20	2.5	50.0	2	100.0	1,076
	Office Space	PT appointments Shared workstation	1	6.5	6.5	5	32.5	350
		Other Academic Appointments - hotelling workstation	1	6.5	6.5	6	39.0	420
		Administrative Workstation - Department Secretarial Staff	1	6.5	6.5	3	19.5	210
		Photocopy/Storage	n/a	n/a	9.0	2	18.0	194
Total Area							**259.0**	**2,788**

Faculty of Social Sciences – Avard-Dixon Building Occupants

Academic Unit	Space Category	Room Name	Cap.	Area per Station	Room Area	# of Rooms	Net Assignable Area (nasm)	Net Assignable Area (nasf)
Anthropology	Office Cluster	Department Head's Office	1	13	13.0	1	13.0	140
		Academic Office – Faculty FT	1	13	13.0	2	26.0	280
Anthropology sub-total							39.0	420
Commerce - RJC	Instructional space	Trading Lab - Computer Lab	15	3	45.0	1	45.0	484
		Testing Room	3	3	9.0	1	9.0	97
		Study/Meeting Rooms	5	3	15.0	5	75.0	807
	Office Space	RJC Director's Office	1	15	15.0	1	15.0	161
		Department Head's Office	1	18	18.0	1	18.0	194
		Academic Office - Faculty FT	1	13	13.0	9	117.0	1259
		Executive-in-residence Office	1	13	13.0	1	13.0	140
		Career Services Coordinator's Office	1	9	9.0	1	9.0	97
		Student Associations Workspace	-	-	13.0	1	13.0	140
Commerce - RJC sub-total							314.0	3,379
Economics	Office Space	Department Head's Office	1	13	13.0	1	13.0	140
		Academic Office - Faculty FT	1	13	13.0	4	52.0	560
Economics Total							65.0	699
Geography & Environment	Instructional space	Geography Teaching Lab	24	4	96.0	1	96.0	1,033
		GIS Teaching Laboratory	24	2.5	60.0	1	60.0	646
	Research Space	Field Equipment Storage	1	20	20.0	1	20.0	215
		Research Workspace - Allowance	n/a	n/a	n/a	n/a	100.0	1,076
	Office Space	Department Head's Office	1	13	13.0	1	13.0	140
		Academic Office - Faculty FT	1	13	13.0	6	78.0	839
		Technician's Workroom	1	9	9.0	1	9.0	97
G & E sub-total							376.0	4,046
Pol. Sci. & Int'l Relations	Office Space	Department Head's Office	1	13	13.0	1	13.0	140
		Academic Office - Faculty FT	1	13	13.0	4	52.0	560
Political Science & Int'l Rel. sub-total							65.0	699
Sociology	Office Space	Department Head's Office	1	13	13.0	1	13.0	140
		Academic Office - Faculty FT	1	13	13.0	2	26.0	280
Sociology sub-total							39.0	420
Total Area							**898.0**	**9,662**

Faculty of Social Sciences – Shared Space/Dean's Office

Academic Unit	Space Category	Room Name	Cap.	Area per Station	Room Area	# of Rooms	Net Assignable Area (nasm)	Net Assignable Area (nasf)
Faculty of Social Sciences	Research Space	Research allocations	1	n/a	n/a	n/a	35.0	377
	Office Space	Academic Workstation - PT appointments	1	6.5	6.5	5	32.5	350
		Other Academic Appointments - hotelling workstation	1	6.5	6.5	2	13.0	140
		Meeting Room	8	2.5	20.0	1	20.0	215
		Meeting Room	16	2.5	40.0	1	40.0	430
		Photocopy/Storage	n/a	n/a	9.0	3	27.0	291
Shared Space sub-total							167.5	1,802
Office of the Dean	Office Space	Reception/Waiting	n/a	n/a	15.0	1	15.0	161
		Dean's Office	1	20	20.0	1	20.0	215
		Administrative Office – Co-ordinator	1	9	9.0	1	9.0	97
		Administrative Workstation	1	6.5	6.5	2	13.0	140
Office of the Dean sub-total							57.0	613
Total Area							**224.5**	**2,416**

Space Requirements Summary

Component	Net Assignable Area (nasm)	Net Assignable Area (nasf)
Faculty of Science – Barclay Occupants	2,211.2	23,792
Faculty of Science – Dunn Occupants	1,327.8	14,287
Faculty of Science – Flemington Occupants	1,778.4	19,136
Faculty of Science – Crabtree Occupants – Psychology Department	507.5	5,461
Faculty of Science – Shared Space	59.0	635
Faculty of Arts - Hart Hall Occupants	482.5	5,192
Faculty of Arts - Crabtree Building Occupants	173.5	1,867
Faculty of Arts - Shared Space	259.0	2,788
Faculty of Social Sciences – Avard-Dixon Building Occupants	898.0	9,662
Faculty of Social Sciences – Shared Space/Dean's Office	224.5	2,416
Total Assignable Area	**7,921.4**	**85,236**

Comparison to Existing Space Inventory

The available space inventory in the four buildings under consideration is listed in the following table. The inventory excludes shared classroom space and reading rooms.

Building	Net Assignable Area (nasm)	Net Assignable Area (nasf)
Barclay	2,885.0	31,054
Dunn	1,690.8	18,191
Flemington	1,691.2	18,202
Avard Dixon	1,151.6	12,400
Crabtree	1,305.4	14,047
Gairdner	931.3	10,021
Hart Hall	1,622.4	17,459
Total Assignable Area	**11,277.7**	**121,374**

There is a large discrepancy between the requirement calculated and the available space. The principal caveat about the comparison is that the requirements are based on consistent space standards applied across all departments. The actual configuration of the buildings, including features such as structural grids and window placements limit the degree to which space can be subdivided to match the standard. For example, offices in Avard Dixon have an average area of 107 nasf, 20% greater than the standard used.

Additionally, lab requirements assume improved utilization rates contingent on changes to scheduling policy that have not yet occurred.

Section 6: Study and Social Spaces

Study Space

Study space at Mount Allison consists of a mixture of formal (dedicated use) and informal (casual) areas in several campus buildings. Some spaces which are used extensively for study are also used for formal instruction and tutoring activities (Hart Hall reading rooms, Writing Resource Centre).

Type	Building	Room(s)/Notes	# of Stations
Formal	Avard Dixon	• FSS Student Lounge (Rm 103) • Economics Lounge (Rm 235) • Anthropology Study Room (Rm 320)	35
	Barclay	• Cragg Resource Centre (Rm 215)	39
	Crabtree	• Language Reading Room (Rm 318)	12
	Dunn	• Physics Student Room (Rm 405) – access code required	12
	Pickard Bell Library	• Group study: G7, G11, 206 • M12 (Writing Resource Centre) • Non-bookable; first-come, first-served	370
		• Quiet study: Basement, Level 200, Level 300	
Informal	Hart Hall	• Johnson Library Room (Rm 106) • Ebbutt Reading Room (Rm 107) • History Reading Room (Rm 208) • Crake Reading Room (Rm 403)	46
	McCain	• Public zone on each level	n/a
	Barclay	• Study alcoves in corridors	n/a
	Gracie's	• Tables and chairs	n/a
	The Flying Bean	• Tables and chairs	n/a
	Vacant classrooms	• Various	n/a
Overall Capacity			514

Note: An average station floor area figure of 2.5 nasm was used to calculate the number of available stations where actual capacities were not available.

Barclay study alcoves

Crake Reading Room – Hart Hall

The mix of available study spaces is typical of that at other Canadian post-secondary institutions, namely a mixture of group and individual stations furnished in a variety of ways: tables, group work rooms, study carrels, computer stations, soft seating, etc.

The main study areas are located in the Pickard Bell Library. Total formal study space capacity is 514 stations or 22% of total enrolment. Both the residence buildings and Jennings dining hall provide additional informal study capacity.

Two pilot projects will temporarily increase the amount of study stations in McCain and Pickard Bell Library on a trial basis. Feedback from users and usage rates will be used to determine whether or not these stations are made permanent.

Issues with Study Space

Consultations with students identified a perceived shortage of study spaces as well as issues with study station quality. Specific issues raised include:

- Limited group study rooms
- Limited individual study areas
- Library
    - Crowding during exams
    - Poor lighting
    - Lack of power outlets
    - Unattractive decor
- No system to book and track use and/or demand of study rooms

To the last point, many students spoke anecdotally of numerous occasions of arriving at rooms only to find them in use or with notes on the door indicating a booking and subsequently having to scour the campus to find unoccupied space. Additionally, occupied rooms able to accommodate larger groups are sometimes used by one or two students. Lack of awareness of and inconsistent building hours from year to year also made finding study space difficult.

Study Space Policy and Practice

In order to better manage study space as a University resource that is integral to the student experience, Mount Allison should adopt a formal study space policy that sets out capacity targets and booking and use practices.

Target Number of Stations

The first step in the creation of a study space policy is establishing a target for study station capacity as a percentage of total enrolment. An explicit target will help monitor and manage the amount of study stations is required on campus, if any, and inform future capital planning projects.

Target Campus-Wide Study Space Mix

Following a target study space allocation per student, Mount Allison should determine the optimal mix of study space on campus based on three broad categories:

- Quiet study (individual) — Study carrels and chairs; Computer stations
- Silent study (individual) — Study carrels and chairs
- Group study — Group work rooms; Tables in open areas

Modern academic institutions provide a mixture of all three categories, though individual study space constitutes the majority of study space stations. A sample mix could be 30% of stations dedicated to group study with the remaining 70% split between quiet and silent individual study. The exact mixture is dependent on space availability, its character, and location. Up-to-date and accurate inventory is critical to monitor and manage these space resources. Many study spaces occupy a grey zone where both individual and group study are possible.

Online Booking System

Currently, there is no accepted campus-wide rules or method for booking study space. Group rooms in McCain may only be booked for clubs and societies and all other group study space on campus is used on a first-come, first-served basis. Many of the frustrations voiced by students stem from a lack of a booking method.

An online system for booking group rooms can help to formalize the booking process and improve the student study experience. The system should consider the number of bookings allowed per student per day, the maximum booking duration, and the minimum group size required to book certain rooms. Classroom timetables will also need to be uploaded to the system if Mount Allison wishes to encourage the use of classrooms for study when they are not scheduled. Online bookings will also allow the University to collect accurate room usage data that can be used for planning decisions in the future.

Building Hours

With the exception of the Pickard Bell Library, until recently there was limited evening access to academic buildings on campus for budgetary and security reasons, restricting access to approximately 30% of the available study stations. In response to feedback from students and staff, building hours have since been extended for the 2016-17 academic year with closing times between 9:00 PM and 11:00 PM for most buildings (Hart Hall will close at 7:00 PM).

Quality Standard

Quality standards for different types of study stations can support an overall effort to update and improve study space over the long-term.

Social Space

Social and study space, especially informal areas, are two sides of the same coin – space prescribed for one use can usually be used for the other seamlessly.

Locations that function principally as social space for students include Jennings Dining Hall, the Flying Bean in the Pickard Bell Library, and food service facilities in McCain (Gracie's, the Pond). Some departments provide spaces that serve a social function in addition to providing study space. Students who live on campus have access to residence-specific social space (lounges, kitchenettes, etc.).

For a campus and student population of its size, there is no perceived shortfall in the amount of social space that is available. Issues raised during consultations were mainly related to spaces not being suitable for specific activities or group sizes.

Aboriginal/Indigenous Space

McCain 130 has been assigned as a temporary location for Aboriginal/Indigenous space for Fall 2016. Whether or not this is the best permanent location for both users and the University will be evaluated at the end of the year.

Opportunities to Create Additional Study & Social Space

Formal Study

Following the results of the utilization analysis, underused classrooms are leading candidates to be repurposed as formal study space.

Informal Study/Social Space

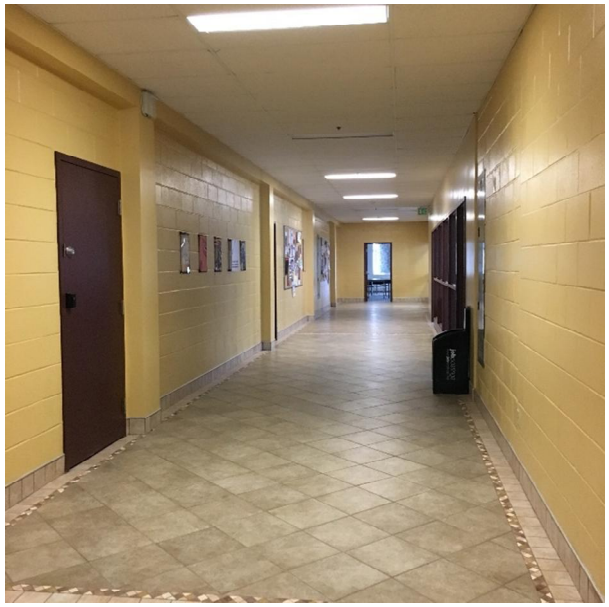
There are several buildings with latent capacity to accommodate arrangements of soft seating and/or work tables in circulation corridors to provide touch-down spaces in all academic buildings.

Examples of Circulation Spaces with Potential to Accommodate Touch-down Stations

Crabtree Auditorium Lobby Areas

McCain Lobby Areas

Avard-Dixon Circulation Spaces



Section 7: Planning Directions

Campus planning directions described here have the primary goal of matching building attributes and capacity to the highest and best use in terms of activities: to improve the overall quality of accommodation while achieving a better match between space allocated for academic uses and the assessed requirements.

This section outlines opportunities and approaches to achieve this goal, illustrates high-level planning allocation scenarios, and recommends policies and procedures to manage space going forward.

Goals	Primary • Support the University's academic mission by matching building attributes to activities to improve the overall quality of accommodation provided • Achieve the highest and best use of space and position buildings for incremental improvement that supports the cycle of building renewal Secondary • Cluster and co-locate related academic departments • Address quality of space across all categories (classrooms, laboratories, offices) • Improve accessibility and connections between buildings
Opportunities	• Gairdner Hall • Underused space in Crabtree • Underutilized teaching space in Flemington, Barclay, Hart, Dunn, and Crabtree
Approach	• Match attributes to building characteristics; make optimal use of capacity and characteristics; fit-to-function

The following table describes the best uses of the buildings considered in this study. Barclay and Gairdner are best suited to house 'wet' activities; all other buildings are better suited for 'dry' activities.

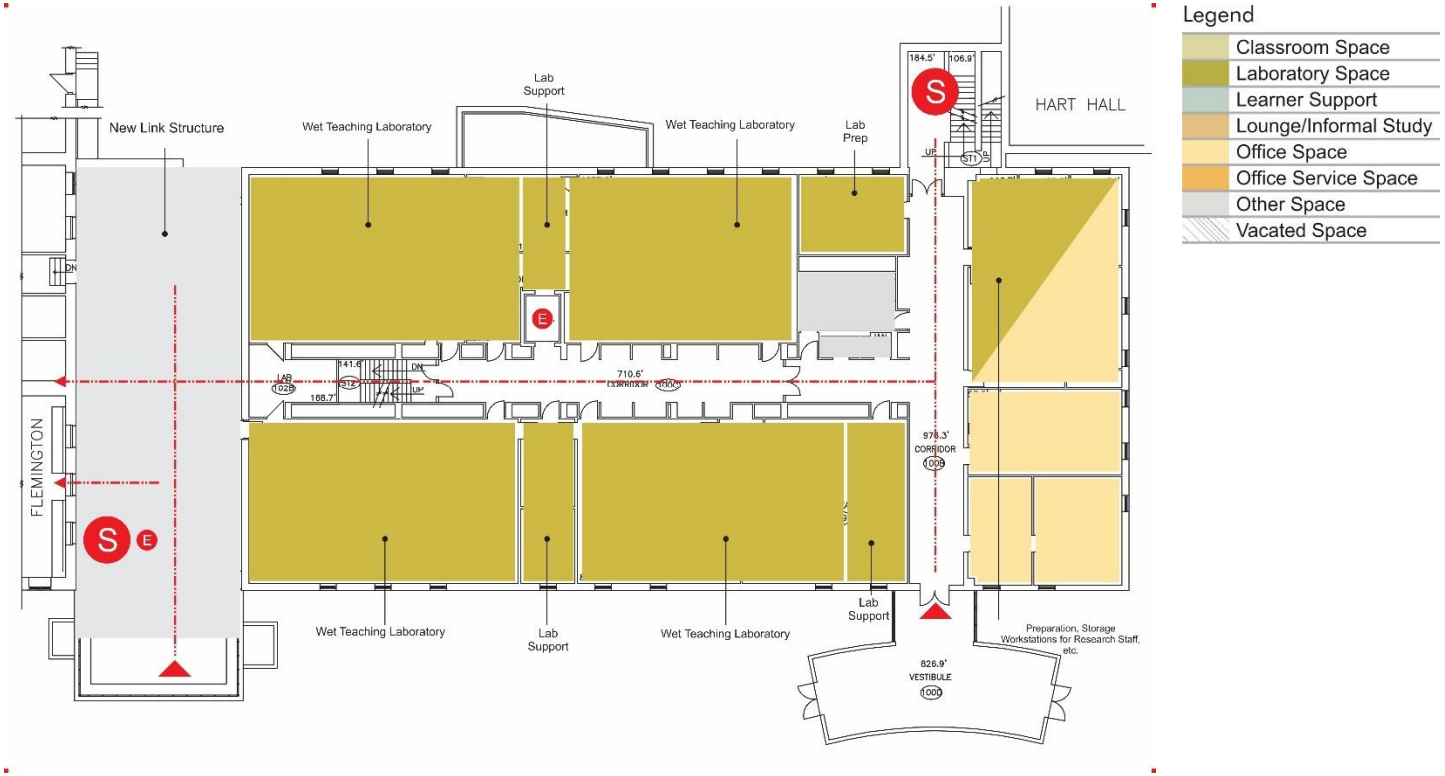
Building	Best Uses
Barclay	Wet uses – teaching, research Dry uses – classrooms, offices Accessibility – accessible
Dunn	Dry uses – classrooms, teaching, research, offices Accessibility – accessible
Flemington	Dry uses – classrooms, teaching, research, offices Accessibility– entrances above grade and no elevator
Gairdner	Wet and/or dry uses requiring column-free, long-span space Accessibility – no elevator
Crabtree	Dry uses – classrooms, teaching, research, offices, storage Accessibility – constrained by split levels
Hart	Dry uses – offices, small seminar rooms and related uses Accessibility –no elevator

Illustrations of Potential Uses

Barclay

- Best suited to 'wet' uses – chemistry and biology teaching and research
- Level 100 illustrative layout for dedicated wet teaching floor – includes teaching labs (24 to 30 stations), lab support, and academic offices/workstations. Research relocated to Level 300.

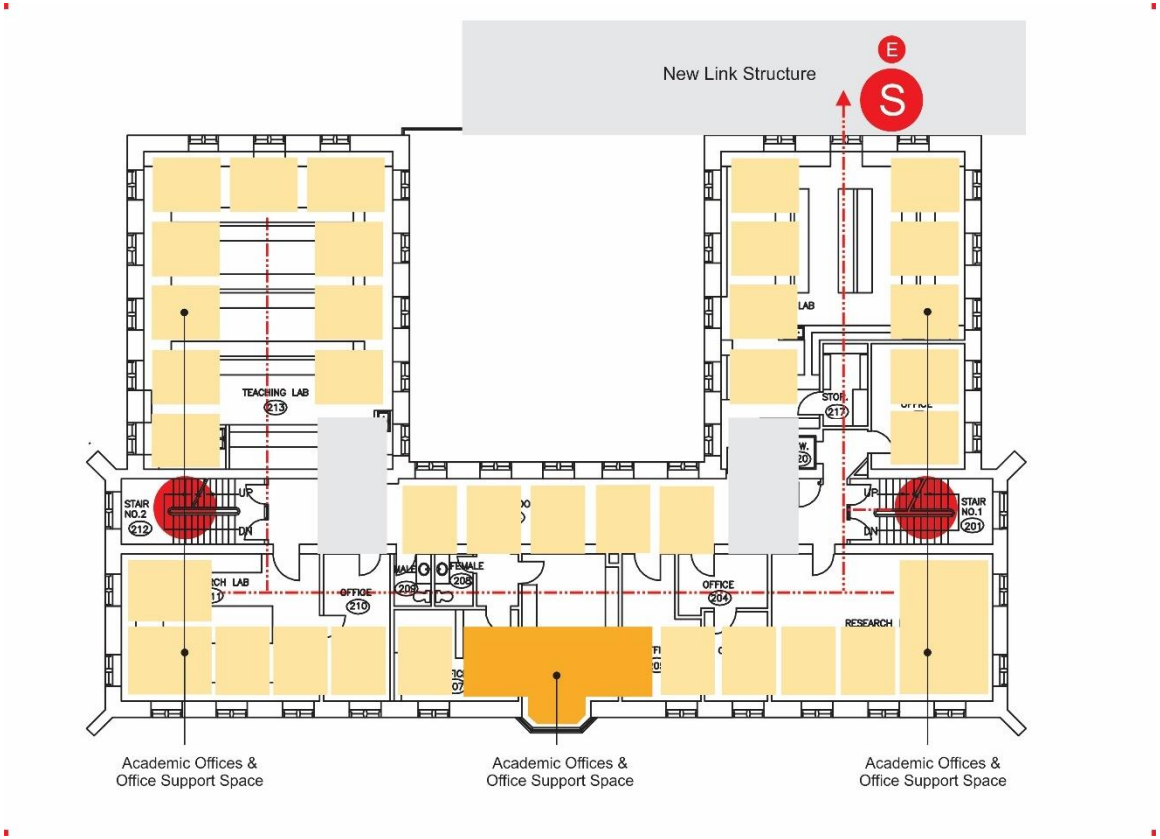
Level 100 Illustration



Flemington

- Best suited to 'dry' uses – classrooms, dry teaching/research, academic offices
- Level 200 illustrative layout – includes classroom/dry teaching space, and academic offices/workstations. Teaching and research space relocated.

Level 200 Illustration



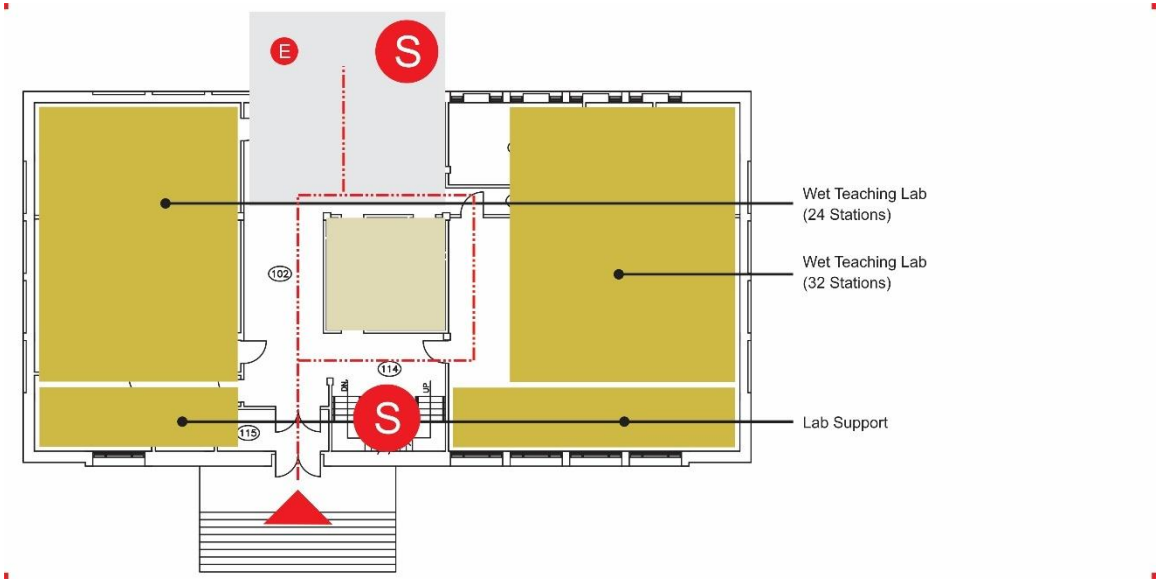
Legend

- Classroom Space
- Laboratory Space
- Learner Support
- Lounge/Informal Study
- Office Space
- Office Service Space
- Other Space
- Vacated Space

Gairdner

- Best suited to 'wet' uses – science teaching and/or research laboratories
- Level 100 illustrative layout – includes assignable areas for wet lab uses with support spaces

Level 100 Illustrative Layout



Legend

- Classroom Space
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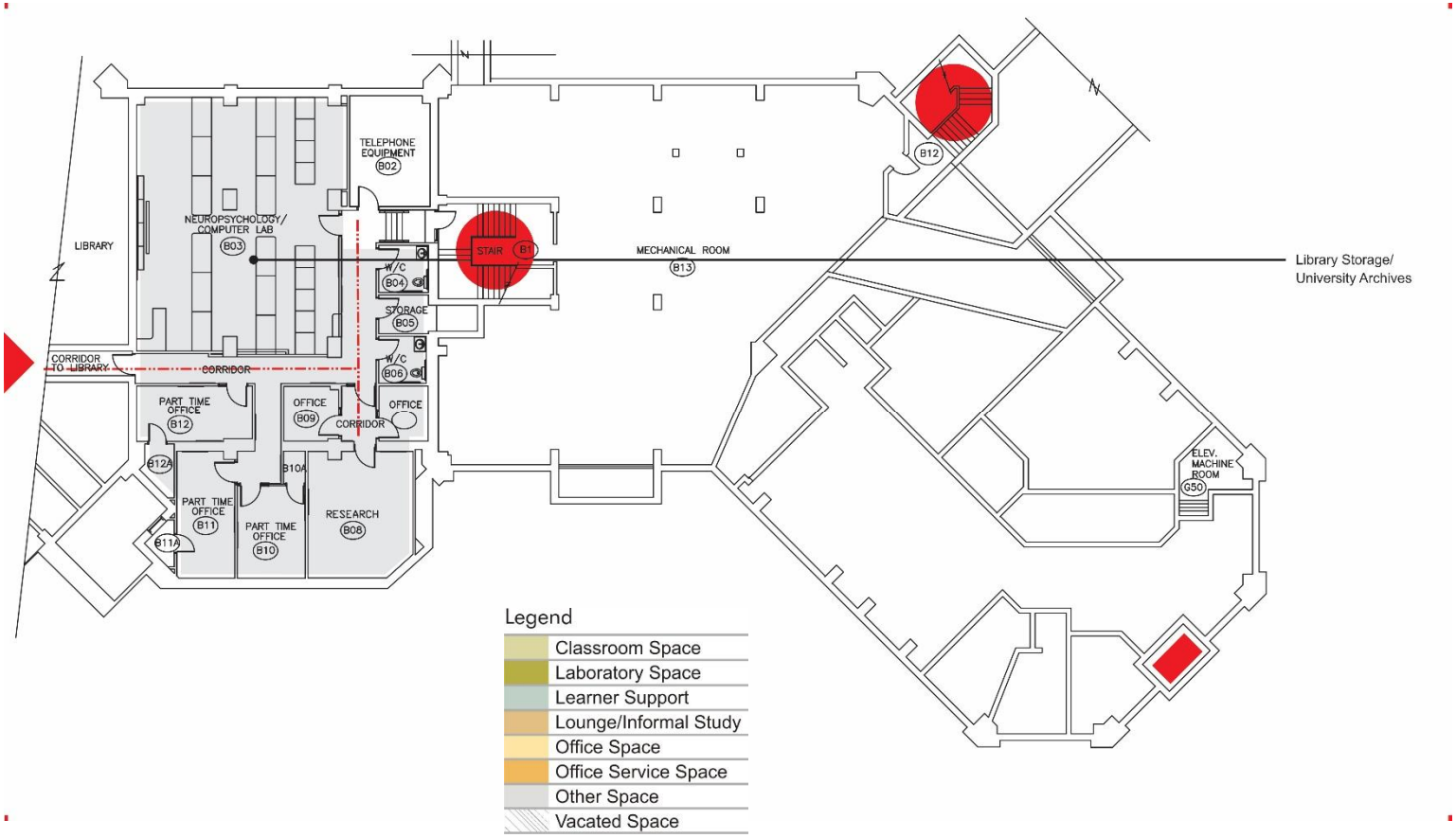
- Vacated Space

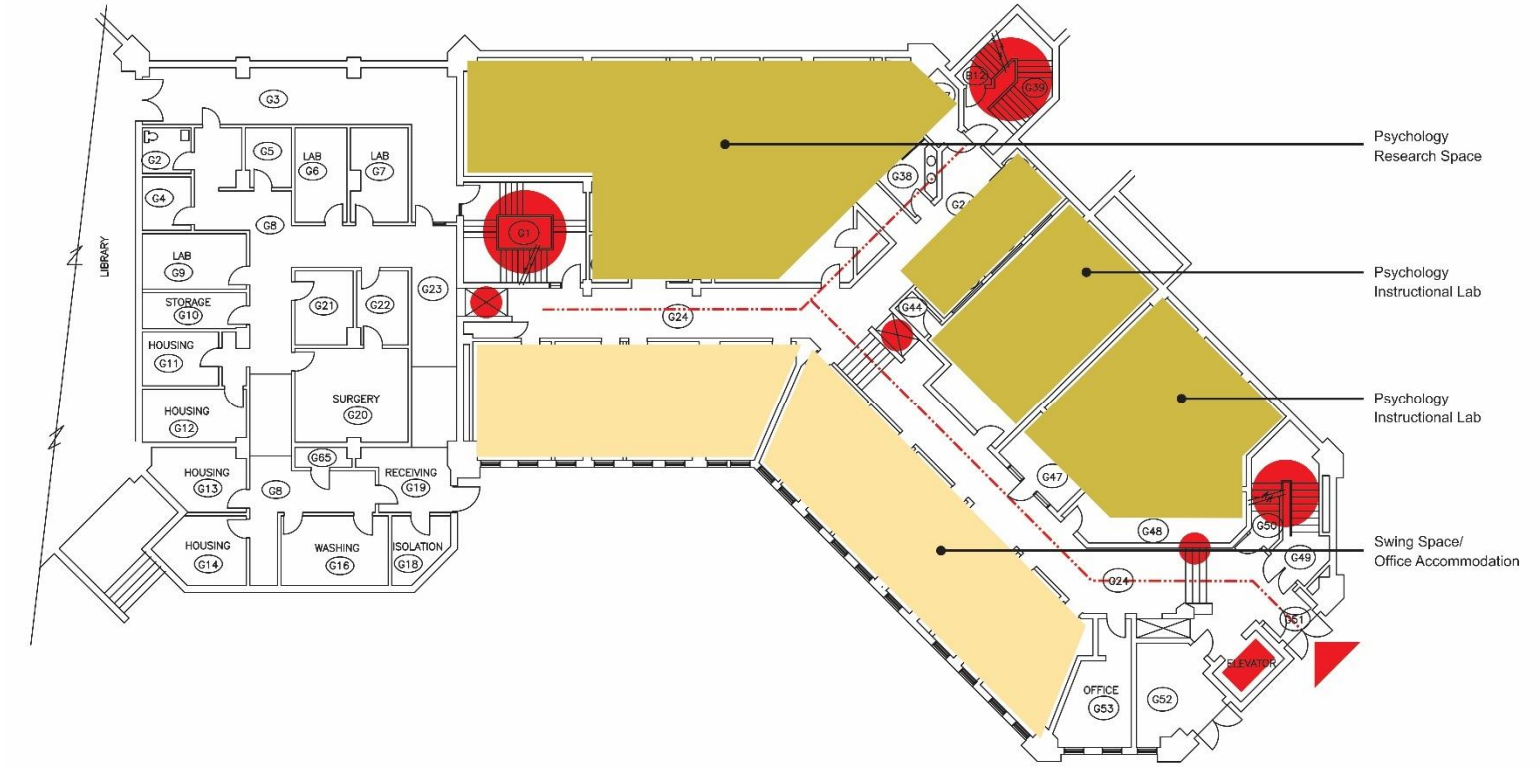
Crabtree

- Best suited to 'dry uses' – classrooms, dry teaching/research, academic offices, storage
- Vacant offices on Level 100 are well-suited for temporary accommodation and swing space as renewal projects begin
- Level -100 (Basement) illustrative layout – includes consolidated library storage. Psychology teaching and research space to be relocated.
- Level 000 (Ground) illustrative layout– includes research and office/swing space

Level –100 (Basement) Illustration



Level 000 (Ground) Illustration

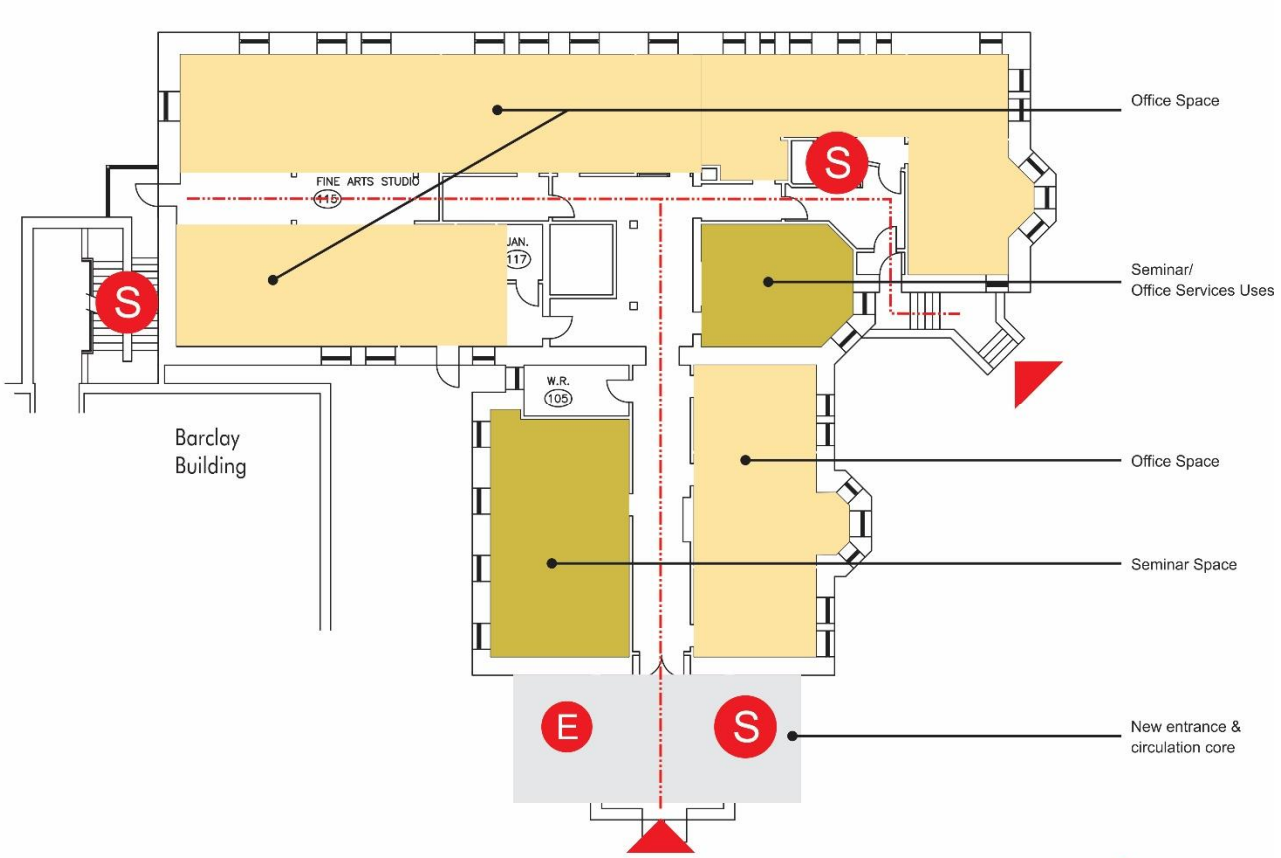


Legend

Classroom Space
Laboratory Space
Learner Support
Lounge/Informal Study
Office Space
Office Service Space
Other Space
Vacated Space

Hart Hall

- Best suited to 'dry' uses – offices, seminar rooms and related uses
- Addressing accessibility issues should be high priority goal for any future building renewal project
- Level 100 illustrative layout – includes office space, seminar rooms, and a schematic configuration for a new building entrance and circulation core



Legend

- Classroom Space
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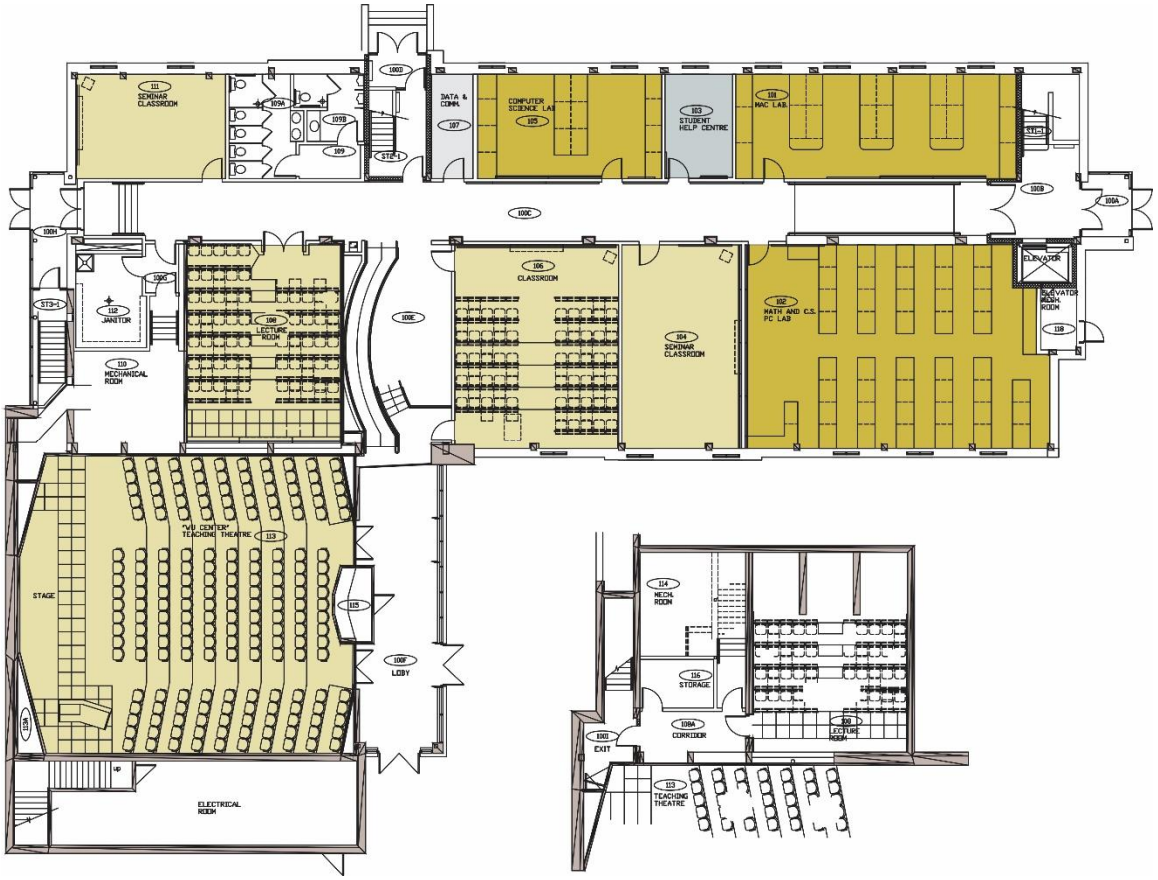
- Office Service Space
- Other Space
- Vacated Space

Dunn Hall

- Best suited to dry uses – classrooms, teaching, research, offices
- Level 100 illustrative layout – includes classrooms and computer laboratories as currently configured



Legend

Classroom Space
Laboratory Space
Learner Support
Lounge/Informal Study
Office Space
Office Service Space
Other Space
Vacated Space

Managing Instructional Space

The analysis of scheduled use of classrooms and teaching laboratories showed a significant number of instances of low rates of use for several scheduled spaces.

Low utilization rates come with significant opportunity costs to the institution: a larger inventory of rooms depletes operating funds, dilutes the effectiveness of funds available for multimedia systems and furniture because they are spread over a greater area than necessary, and inefficiently used space represents missed opportunities to allocate space to other institutional priorities and needs.

Inventory of Available Space

As all campus space is University space to be used to support the University's academic mission and priorities, all space suitable for instructional use should be included in a teaching space inventory and scheduling system database regardless of location or user and considered available for use. Specific access rules such as restrictions on uses permitted and times reserved for other uses can be established for specific rooms but all space suitable for teaching should be considered as potential instructional venues.

Several campus spaces, mostly notably departmental reading and seminar rooms, are not currently listed in the teaching space inventory list and are not available to the scheduling team for timetabling.

Having access to all instructional spaces can help to match course enrolments and teaching modes to room capacities and design features

Analysing Space Use

Regular analysis of how instructional space is used is essential to managing space and achieving and maintaining a match between demand and room availability. The analysis uses inputs such as course and section enrolments, hours of instruction, and room type to assess both frequency and patterns of use as well as generate the demand for rooms of particular capacities and characteristics. Space missing from the scheduling system and use analysis results in an incomplete picture of available space on campus and demand.

Regular analysis will help scheduling staff identify surpluses and shortfalls of rooms in various capacity ranges and quality issues that might limit room use.

Accurate utilization data is essential to guide investments in classroom and laboratory renewal and upgrades to multimedia systems, fittings and furniture.

With appropriate targets for utilization of instructional space, there is the potential that underused or inappropriate space can be repurposed to meet other University needs.

Managing Instructional Space

To manage instructional space resources, a number of actions are proposed:

1. Establish utilization targets for general purpose classroom space. In establishing a target, the opportunity cost to the University represented by underused teaching space should be considered.
2. Prepare annual assessments of teaching space utilization and demand with comparisons to utilization targets
3. Establish an advisory committee with broad campus representation supported by scheduling and facilities staff with responsibility for:
    - Maintaining the inventory of all instructional space
    - Developing the annual utilization and demand analysis
    - Establishing space utilization targets
    - Considering and making recommendations to senior administration on issues raised by the University community about the use, condition and adequacy of institutional spaces
    - Contributing to developing priorities for investments in renewal of instructional space
    - Providing an annual report to the senior administration on all aspects of instructional space