Project Planning Report for
Instructional Centre Phase 1A
at the University of Toronto Scarborough

May 2009

I Executive Summary

UTSC has experienced several years of sustained enrolment growth; in the last ten years the student enrolment has doubled. UTSC now functions as a medium-sized, comprehensive, regional university in the eastern Greater Toronto Area. While UTSC has benefited from this strong growth, it has exceeded its physical capacity within existing facilities. Currently, UTSC lags significantly behind the recommended space standard for university academic facilities.

A strategic planning exercise underway at the University of Toronto Scarborough addressing the long-term future of the campus. Over the next five years UTSC plans to respond to the dramatic increase in demand in the Toronto Region for undergraduate places by growing enrolment in undergraduate programs, and expanding graduate enrolment in the longer term. This planned growth, however, is dependent on the addition of new facilities on the campus.

This strategic planning exercise has coincided with a comprehensive capital planning process in the post secondary sector, initiated by the provincial government. Information was requested from Ontario post-secondary institutions, identifying deferred maintenance and existing and future projects that are being considered.

In response to the request from the Ministry of Training, Colleges and Universities (MTCU), the University of Toronto submitted a proposal for the University of Toronto Scarborough that consisted of a multi phased project identified as an Instructional Centre and Laboratory Complex (approximately 25,000 nasm). This proposal will meet the existing critical shortages of facilities and also accommodate further growth of 2,000 to 2,500 undergraduate students and approximately 1,000 graduate students.

This multi-phased project was presented at UTSC in December 2008 to the Courtyard Group, a consulting firm hired by the Government to assess capital needs of provincial institutions. Subsequently, the Federal Government announced a call for proposals for infrastructure, with successful projects receiving 50% funding. The application deadline was March 31, 2009 for projects that could be “materially complete” by March 31, 2011. UTSC’s Instructional Centre Phase 1A was submitted through the U of T to the Federal Government (along with five other UofT proposals), in anticipation of a 50% match from the Provincial Government.

Project Planning Committees were struck to continue the planning for these facilities and the Instructional Centre Phase 1A as described in this report, represents the first phase in a series of projects which will be required to accommodate the existing and future facility needs of the campus

UTSC is now at a new threshold in terms of the size of the campus community and the range and breadth of scholarship and research underway, yet the campus remains a hidden gem in its immediate vicinity. The new Instructional Centre Phase 1A will be seen from all directions, including each of the three adjacent major roadways. It will become the most publicly visible facility at UTSC and will serve as a front door to the campus and a symbol of excellence.

The new facility will be significant, not only for addressing the critical space shortages for teaching and research on campus, but it will be the first building at UTSC to be located

on the north campus and marks the beginning of the next wave of expansion for the campus. The UTSC Master Plan 2001 identified three sites on the north campus. This site will be the first of those to be developed and, as such, is consistent with the planning principles and direction of the Master Plan.

The new Instructional Centre will showcase many of UTSC's flagship programs and will facilitate a highly animated street front that will serve as a magnet for students and the community.

The Instructional Centre Phase 1A will

- provide 13 high quality classrooms and 5 specialized data modeling/communications labs, and will accommodate both lecture-based classes, as well as seminar and case rooms for later-year undergraduate teaching and for graduate teaching.
- create a new street front hub for Co-operative programs for both employers and students-- a pillar of UTSC since 1975.
- create capacity for UTSC to provide continuing education programming for the local communities, which is, at present, critically constrained due to facility shortages on campus.
- provide over 90 offices for faculty and graduate student offices. UTSC is currently under serviced in terms of academic offices. In January 2009 it became necessary to install academic portables with 23 academic offices, and it is anticipated that another 26 offices will need to be provided in two more portables in the Summer of 2009. Thus 49 new offices alone are required to replace those in temporary structures. Over the next three years, it is likely that an additional 25 faculty positions will be filled.
- help address the campus' need for additional study spaces and food services.

The Instructional Centre Phase 1A will be approximately 7,000 net assignable square meters or 13,990 gross square meters.

The total estimated project cost for the UTSC Instructional Centre Phase 1A is $78,000,000.

The total operating costs are estimated to be between $1.0 and $1.2 million annually. This includes utilities and maintenance costs as well as engineering, caretaking, security, and maintenance staffing costs.

This project is being submitted under the Federal Knowledge Infrastructure Program, identified as the UTSC Instructional and Laboratory Centre, requesting a total of $70 million. The Ontario government, in its budget of March 26, 2009, affirmed commitment to matching federal capital infrastructure investments in the Knowledge Infrastructure Program. To fully fund the balance of the Instructional Centre Phase 1A, UTSC will contribute a lump sum of $8 million at the start of the project. No borrowing is required.

The project will proceed with implementation once funding commitments are in place. It is anticipated that the UTSC Instructional Centre Phase 1A will be "materially complete" by March 2011 with full operational occupancy by September 2011.

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II Project Background

a) Membership

William Bowen	Associate Professor and Chair, Humanities, UT Scarborough (Chair)
Lisa Neidrauer	Planner, Office of the AVP, Campus & Facilities Planning, U of T (Secretary)
Janis Jones	Secretary to the Committees of Council and Academic Integrity Officer, UT Scarborough (Assistant Secretary)
John Scherk	Professor and Vice-Dean, UT Scarborough
Andre Sorensen	Associate Professor, Department of Social Sciences, UT Scarborough
Katherine Larson	Assistant Professor, Department of Humanities, UT Scarborough
Iris Au	Senior Lecturer, Department of Management, UT Scarborough
Marc Fournier	Associate Professor, Department of Psychology, UT Scarborough
Kim McLean	Chief Administrative Officer, UT Scarborough
Jim Derenzis	Director Facilities Management, UT Scarborough
Jeevan Kempson	Assistant Chief Administrative Officer, UT Scarborough
Andrew Arifuzzaman	Chief, Strategy and Planning, UT Scarborough
Don MacMillan	Registrar and Director of Enrolment Services, UT Scarborough
Clare Hasenkampf	Associate Professor and Director Centre for Teaching and Learning, UT Scarborough
Roger Francis	Director Arts and Science Co-op, UT Scarborough
Zoran Piljevic	Director Information and Instructional Technology Services, UT Scarborough
Dr. Curtis Cole	Director, AACC, UT Scarborough
Sarah Johnson	Graduate Student Representative, UT Scarborough
Fatih Kurt	Undergraduate Student Representative, UT Scarborough
Julian Binks	Director, Planning and Estimating, Capital Projects
Gail Milgrom	Managing Director, Office of the AVP, Campus & Facilities Planning, U of T

b) Terms of Reference

1. Make recommendations for a detailed space program and functional layout for the Instructional centre at the University of Toronto Scarborough.

2. Identify the space program as it is related to the existing and approved academic plan at UTSC; taking into account the impact of approved and proposed program that are reflected in increasing faculty, student and staff complement. Plan to realize maximum flexibility of space to permit future allocation, as program needs change.

3. Demonstrate that the proposed space program will be consistent with the Council of Ontario Universities' and the University's own space standards.

4. Identify all deferred maintenance and items of infrastructure renewal for the buildings that are to be renovated.

5. Identify all secondary effects, including space reallocations from the existing site, impact on the delivery of academic programs during construction and the possible required relocation as required to implement the plan of existing units.

6. Address campus-wide planning directives as set out in the campus master plan, open space plan, urban design criteria, and site conditions that respond to the broader University community.

7. Identify equipment and moveable furnishings necessary to the project and their estimated cost.

8. Identify all data, networking and communication requirements and their related costs.

9. Identify all security, occupational health and safety and accessibility requirements and their related costs.

10. Identify all costs associated with transition during construction and secondary effects resulting from the realization of this project.

11. Determine a total project cost estimate (TPC) for the capital project including costs of implementation in phases if required, and also identifying all resource costs to the University.

12. Identify all sources of funding for capital and operating costs.

13. Complete report by May, 2009.

c) Background Information

A strategic planning exercise underway at the University of Toronto Scarborough addressing the long-term future of the campus coincided with a comprehensive capital planning process in the post secondary sector, initiated by the provincial government. Information was requested from the Ontario institutions identifying deferred maintenance and existing and future projects that are being considered. With this information, the Ministry is to compile a comprehensive inventory of capital needs while making the universities and colleges active participants of this long-term plan.

In response to the request from MTCU, the University of Toronto submitted a proposal for the University of Toronto Scarborough that consisted of a multi phased project identified as an Instructional Centre and Laboratory Complex. This proposal will meet the existing critical shortages of facilities and also accommodate further growth of 2,000 to 2,500 undergraduate students and approximately 1,000 graduate students.

Project Planning Committees were struck to continue the planning for these facilities and the Instructional Centre as described in this report, represents the first phase in a series of projects which will be required to accommodate the existing and future facility needs of the campus. Following the submission of this report, the Instructional Centre Committee will continue to meet to develop the second phase of the project.

Previous planning for substantial enrolment growth at all three campuses of the University of Toronto began early in 1998. However, over the following ten years many more students entered the Ontario system than the Ministry, COU or the University of Toronto anticipated. At the University of Toronto Scarborough the FTE (undergraduate and graduate) enrolment doubled, growing from 4,305 in 1997/98 to 8,601 in 2008/09. From the perspective of buildings and space, another useful measure is headcount – effectively the number of bodies that have to fit into classrooms and corridors. Between 1997/98 and 2008/09 the headcount at UT Scarborough also basically doubled from 5,289 to 10,475. The ten year change in both FTE and headcount are shown in the table below:

TABLE 1: FALL/WINTER STUDENT # INCREASES AT UT SCARBOROUGH 1997/8-2008/9

	1997-98 FTE	2008-09 FTE	1997-98 Headcount	2008-09 Headcount
Undergrad	4,270	8,417	5,254	10,273
Graduate	35	184	35	202
Total	4,305	8,601	5,289	10,475

Since 2001 six new buildings, with a total project value of $125 million, have been completed on the Scarborough campus adding 15,100 nasm of academic space and 4960 nasm of residential space. This has increased the academic space from 31,800 nasm to 46,920 nasm, an increase of 48%. The number of residential beds increased from 537 to 767.

These new buildings have enabled the University of Toronto Scarborough to meet some of the challenges of the enrolment increases, and they have certainly addressed many

chronic space problems in the library, for research, student services and administration. They have unquestionably modernized and reinvigorated the campus. However, the campus started the period of growth with substantial space deficits and these deficits not only remain but have been exacerbated.

Table 2 below shows clearly that, in spite of this aggressive construction program, the gap between actual nasm and required nasm has continued to grow. The enrolment between 1997/98 and 2008/09 has increased much faster than space at UT Scarborough and space per FTE has decreased from 7.4 in 97/98 to 5.5 in 08/09, a decline of 26 per cent.

TABLE 2: NASMS/FTE AT UT SCARBOROUGH

	NASM	FTE Enrolment	NASM/ FTE Actual	NASM/ FTE Required*
1997/98	31,803	4,305	7.4	8.9
2001/02	32,797	4,975	6.6	8.9
2008/09	46,918	8,601	5.5	8.3

*Nasm Required Based on the COU Space Standards

The building being proposed in this report is needed primarily to address existing shortages and will become a platform for future planned growth.

The most acute of these deficits is in classroom space. The severity of the situation is apparent in the Council of Ontario Universities 2007-08 Inventory of Physical Facilities of Ontario Universities. The University of Toronto Scarborough ranks second last among the twenty-four university campuses in Ontario for classroom space. Only the Ontario College of Art and Design, an institution whose students spend the majority of their day in art studios, has less classroom space than UTSC. The 2007-08 inventory shows that Scarborough had only 48.7 per cent of the space generated by the COU standards (the system average was 76.4 per cent). This has improved somewhat in 2008-09, with the addition of the 234 seat classroom in the Science Research Building, and UT Scarborough is now at 51 per cent of the classroom space generated by the COU model.

In everyday reality, this shortage of instructional space means that classrooms are crowded, many of the larger ones are in use for over 50 hours a week, there is very limited flexibility in scheduling, there are few rooms available for extra-curricular events unless a class is cancelled to accommodate them, and many mid-term exams and tests have to be scheduled on Saturdays and Sundays. Since almost every feasible strategy has been employed to allow large enrolments to be taught with the limited classroom space available, there is no capacity to address planned or unanticipated enrolment growth.

There is also a serious shortage of academic offices and related spaces. The COU space analysis shows UT Scarborough at 80.5% of the space guideline for academic offices. What this does not clearly reflect is that because many of the existing offices are larger than the COU standard of 12 or 13 nasm, and the 1960s buildings on the Scarborough campus have many offices which exceed this, there are not a sufficient number of offices. Many of the larger offices are shared in some way, for instance

between a tenure stream professor and a stipend professor, not an easily workable arrangement, and hardly a positive factor in recruitment and retention. Even with the 16 additional academic offices in the Science Research Building, and the creation of 12 offices with the balcony enclosure project in the Science Wing, there remains a current shortfall of approximately 50 academic offices. In January 2009, it became necessary to provide academic portables with 23 offices to house graduate students and CLTA/stipend appointments that could not be accommodated in existing space, to allow for faculty to have private offices and to accommodate new hires as well as a 50 seat classroom. Despite these measures, UTSC will need to add two more portables with a total 26 offices in Summer 2009 to further accommodate unmet office needs. Once completed the campus will house 49 faculty and staff within these offices

In addition, there is a chronic problem with study space at UT Scarborough, especially good quality quiet study space. COU data demonstrates UTSC has only 61% off the recommended study space. There have been repeated complaints about the quality of study space from the Students' Union. An issue raised in the National Study of School Evaluation reports reveals that students surveyed consider study space deficient either in quantity or quality. A number of incremental measures are being taken to address these concerns, but there is consensus on campus that a substantial, long-term solution is necessary. This is especially important in the context of providing study space that is secure on a twenty-four hour basis.

The campus is poorly provided with Food Services space. Students are often eat in hallways and stairwells with few choices for health alternatives. As seen in the various student surveys this issue has become a critical challenge for the campus.

The University of Toronto Scarborough needs a new building to relieve acute shortages of classrooms and student support space, to provide additional academic offices and other academic space, to enhance student experience by providing up-to-date instructional facilities and high quality, secure study space, to provide flexibility in meeting diverse and changeable demands for space, and to provide capacity to meet the space demands of future enrolment growth.

Phase 1A of the Instructional Centre will serve to meet some of the existing space shortfalls by providing critically needed classrooms, academic office and support spaces, student study space, and food services space. This phase will also provide some degrees of freedom for the campus to begin to implement its longer-term goals.

d) Statement of Academic Plan

In 2008, UTSC's Principal initiated a strategic planning process that ran in parallel with the University of Toronto's 2030 planning initiative. In full alignment with the 2030 plan that called for campus differentiation, UTSC's Strategic Plan identified five priorities that would build upon the campuses distinct strengths in program content and pedagogical directions. The strategic priorities are to:

- create an environment to house and support the growth of new and emerging fields of scholarship.
- expand onsite graduate training at the Masters and PhD levels to 10+ percent of the total student population.
- become an international hub for learning and partnership within the U of T system.

- further its leadership in experiential learning by expanding its offering in curricular, co-curricular and extra-curricular opportunities for students.
- ensure that the best people, appropriate resources and excellent facilities and programs are in place to provide an exceptional place to work and learn.

Five-year academic plans have now been developed reflecting the strategic directions noted above. Each of the seven academic areas of UTSC has proposed numerous cutting-edge undergraduate and graduate programs that will meet the interests of today's students and prepare them for future career opportunities.

The greatest impediment to fully realizing the academic plans remains the physical space available to house faculty and teaching facilities. This phase of the Instructional Centre at UTSC will have a direct impact on two high demand academic areas targeted to move to the new facility, enabling them to realize their plans.

A key anchor tenet for this facility is Department of Computer and Mathematical Sciences (CMS) is home to mathematics, statistics and computer science. The University of Toronto is at the elite level in research in these fields, with many faculty at UTSC contributing to this reputation. The new facility will allow for the expansion of this department and permit new strategic faculty hires, greater curriculum innovation, more opportunities to engage undergraduate students in research and independent study, and more graduate students based at UTSC. Further, the facility will give the department a greater capacity to service the broader student population that have primary majors outside the Mathematical Sciences and require skills of "quantitative reasoning". This facility will house teaching laboratories with cutting edge computer based technologies to provide an exceptional learning environment to enhance student experience. This facility will address the current faculty fragmentation as this department is currently dispersed throughout the campus, limiting the opportunity for cross-collaboration in this critical area for future innovation and student interaction.

Also targeted for the new facility is the Department of Management which is well recognized for an excellent undergraduate program, the BBA. This program covers the seven traditional areas: Accounting, Business Economics, Finance, Marketing, Management Science, Organizational Behaviour/Human Resource Management and Strategy. It attracts excellent students – some of the best at UTSC – and it provides them with a well-thought-out combination of courses and experiential learning that challenges them intellectually, provides them with a transformative experience and prepares them for their working lives to come. More than 75% of applicants wish to enter the high-demand co-op program, while the department can only accommodate 40% of the applicants, currently. A new International BBA, recently launched is expected to attract a high volume of student applicants as well. The new physical expansion would allow the department to offer more positions in its co-op and other high-demand programs, add faculty complement in strategic areas, and provide space to introduce new research based programs such as Human Resource Management, and a Professional Masters in Managing the Professional Firm.

Further, comprehensive academic plans have been developed across all academic departments. With the two departments mentioned above moving to a new facility, secondary space will be freed and allow for new program development, faculty hires, and research initiatives in the areas of Psychology, Biology, Environmental Science,

Humanities and Social Science which, combined, will begin to address the current critical shortfall of academic facilities on the campus.

e) Space Requirements

The Instructional Centre Phase 1A being proposed in this report addresses space shortages in three key academic areas on the UTSC campus: classrooms and study space.

In the Background section of this document reference was made to the status of the existing facilities in relation to the Council of Ontario Universities space guidelines. In this section the requirement for space to address this deficit will be addressed as will the requirements to meet the needs of short to medium term growth.

The analysis used by the Project Planning Committee in the preparation of this report, and in anticipation of the Phase 2 report that will be submitted in fall 2009, was guided by preliminary projections of student, faculty and staff complements for the medium and the long term. These were prepared by UTSC in the spring of 2009 in concert with the UTSC Strategic Directions planning process. The steady state growth projections reflect Towards 2030, the long term strategic planning document submitted to the University's governance cycle in the fall of 2008, which addressed the future of all three UofT campuses in the coming two decades. Towards 2030 explored a range of enrolment strategies with increased FTE students on the UTSC campus, and varying ratios of graduate students to undergraduate students. The strategies also included a significant improvement of the current high student-to-faculty ratio which would result in an increased number of full time faculty.

The different scenarios were used as input measures for modeling space requirements using the COU guidelines. The results varied, yet all resulted in identifying an increased need for academic space at UTSC. Although the scenarios were developed for exploratory purposes - the actual outcome will depend on the level of resources available to the University and will be subject to rigorous detailed academic planning – the impact on the available physical resources at UTSC could be significant.

The table below reflects the current thinking in terms of student enrolment growth only for the medium term to 2013/14, where the emphasis will be on increasing the number of graduate students:

Projected Changes In Student Enrolment at UTSC

	2008/09	2013/14
# FTE UG	8417	8456
# FTE Graduate*	183.8*	525*
# Total FTE	8600.8	8981
UG Headcount	10273	10273
Graduate Headcount*	192	552
Total Headcount	10465	10825
# FTE Masters		119.5
# FTE Professional Masters		198
# FTE Phd		211.5
# FTE Graduate Students	183.8	529

**Graduate student counts represent students enrolled in graduate programs at UTSC and graduate students who self identify as being physically present at UTSC.*

Classrooms

The UTSC campus is severely under serviced in terms of classrooms facilities and cannot accommodate any further growth. The 42 classrooms (3,513 seats) existing in Fall 2008 were booked for regularly scheduled course sections an average of 42 hours per week each, almost 25% above the COU space guideline for classrooms which recommends a minimum average of 34 hours per week. This minimum is based on a 57 hour week and assumes that the remaining hours can be used to accommodate institutional classroom needs that are not regularly scheduled. At UTSC an additional 2.5 hours per week are used for these one time only bookings and 11 hours per week are set aside for term tests. Thus, the potential average utilization of these rooms is 55.5 hours per week, an unacceptable level of utilization that places severe strain on the campus.

The COU guideline indicates that to accommodate the current academic program a total of 52 classrooms would be required; an increase of 9 classrooms (there are now 43 classrooms on the campus). When the demand for classrooms, based on current courses (section sizes and their contact hours studied), not only did the need for additional classrooms become apparent, but the need for classrooms of different capacities was also identified. This analysis modeled an increase in student enrolment (17% increase contemplated by 2030 resulted in a 17% increase in the number of classrooms required, from 52 to 61 rooms). The analysis also allowed for the removal of 10 existing classrooms from service, which are either in poor condition, unsuitable as instructional space, or located in a site that could be better utilized for other purposes. The results of the analysis indicated UTSC should construct 28 new classrooms over the next 4-5 years.

Current and Future Demand For Classrooms At UTSC

Room Capacities	# Classrooms Fall 2008	# Room Hours Per Week Demand	# Rooms Required @ 34 hrs use per week	# Retained Existing Rms	# Room Hours Demand with 17% Increase	# Rooms Required @ 34 Hrs	# Room Proposed	To Be Constructed for 2030
500	1	60	1.8	1	70	2.1	2	1
300	1	48	1.4	1	56	1.7	2	1
220	1	35	1.0	2	41	1.2	2	
175	2	35	1.0	2	41	1.2	2	
135	2	43	1.3	2	50	1.5	2	
120	1	67	2.0	1	78	2.3	2	1
86	2	28	0.8	2	33	1.0	2	
80	2	6	0.2	1	7	0.2	4	3
75	1	32	0.9	1	37	1.1	1	
70	1	31	0.9	1	126	3.7	1	
66	1	15	0.4					
65	1	62	1.8					
60	4	19	0.6	3	114	3.4	7	4
58	1	15	0.4					
55	2	62	1.8					
50	4	60	1.8	2	70	2.1	2	
46	2	73	2.1	2	85	2.5	2	
40	6	239	7.0	6	280	8.2	15	9
30	6	260	7.6	6	971	28.6	15	9
25	1	570	16.8					
	42	1,760	51.8	33	2,059	60.6	61	28

The Instructional Centre Phase 1A is to have 13 of the 28 classrooms, with the remaining 15 to be constructed in future expansion phases.

Academic Offices

Currently UTSC has 313 academic offices: 290 in existing buildings and 23 in temporary structures. The current requirement is for 337 offices, a shortfall of 47 offices (including the replacement of the temporary structures). Another new temporary office structure is being planned for summer 2009 which will bring the total number of offices in temporary facilities to 49. It is anticipated that by 2010/11 the requirement will reach a total of 362 offices. As it is desirable to replace the temporary structures with permanent office space, the shortfall in 2010/11 will be 72 offices.

	# FTE Faculty	# CLTA/ Stipend RA/Pdf Offices Required	Total Academic Offices Required	# Offices (# in Portables)
2008/09	243.3	93.7	337	313 (23)
2009/10	+14		351	339 (49)
2010/11	+11		362	339 (49)
2010/11 with the new Instructional Centre			362	374 (0)

The Instructional Centre Phase 1A is planned to have approximately 90 academic offices. These 90 offices will meet the current shortfall, allow for the elimination of the existing portables, accommodate the 25 anticipated positions to be filled in the next few years and create a small pool of offices for further growth.

Study Spaces

UTSC currently has 3,485 nasm of study space, fairly evenly distributed across the campus. The Library accommodates 681 study spaces and an additional 667 outside of the library, for 1,348 spaces in total.

With a 2008/09 FTE student count of 8601 the COU space guidelines recommend a study space for 25% of the student population (at 2.4 nasm per space). The University of Toronto target is 85% of the COU guideline, or 1,828 study spaces. A portion of the shortfall of 480 spaces is planned to be accommodated in the Instructional Centre. Approximately 140 new study spaces (272 nasm) are in the proposed space program.

Food Services

Food services on the UTSC campus are critically underserviced. Currently there are 2543 nasm assigned to food services, an average of .30 nasm per FTE student. In comparison, St. George, in its urban setting with close proximity to dining choices has .32 nasm per student and UTM with a similar setting as UTSC has .41 per FTE.

The new Instructional Centre Phase 1A will add 520 nasm food facilities to the UTSC campus bringing the nasm per FTE up to .36 in the short term. Additional facilities will be required in future projects.

III Project Description

a) Vision Statement

The new Instructional Centre on the north campus of UTSC marks the beginning of the next phase of expansion for UTSC. The new facility will be significant, not only because it addresses the critical space shortages for teaching and research on campus, but also because it marks the emergence of UTSC as a vital hub for culture and intellectual growth in the eastern region of the Greater Toronto Area.

UTSC is now at a new threshold in terms of the size of the campus community and the range and breadth of scholarship and research underway, yet the campus remains a hidden gem in its immediate vicinity. It has no visibility from any of the surrounding roadways and, as a result, little presence in the surrounding community. As the first structure on the north campus, the new facility will be seen from all directions, including each of the three adjacent major roadways. The Instructional Centre will become the most publicly visible facility at UTSC and will serve as a front door to the campus and a symbol of excellence, representing the University of Toronto's stature as one of the premier academic institutions globally. The facility will become a point of pride for the community on campus and in the surrounding region.

The new Instructional Centre will also provide a vital anchor for a new campus core. The site selected for the facility, at the intersection of Military Trail and Ellesmere Avenue, is central to the long-term development of the campus. This is consistent with the UTSC Master Plan 2001, and with the visioning exercise recently completed. This location will become the core of activity for an expanded north campus, and will include various mixed-use facilities located at the street level, such as retail shops, restaurants and cafés. The intersection will include a stop for Light-Rail Rapid Transit (LRT), which is

expected to become the most frequently used transportation mode to the campus. With student parking for the campus located directly north and east of this site, the site will receive a high level of pedestrian traffic.

The new Instructional Centre will showcase many of UTSC's flagship programs. Exhibition spaces will be integrated into the public areas of the building, facilitating a highly animated street front that will serve as a magnet for students and the community. The facility will accommodate street-front offices for the co-operative learning program -- a pillar of UTSC since 1975. Important employer partners, ranging from public service to private sector, and local business to multinationals, will interact with representatives of the cooperative learning programs in a highly professional context. UTSC's unique integration of real-world experiential learning with academic programming continues to be a thriving and defining characteristic of the overall campus identity.

As UTSC transitions from a satellite campus of the university to a much more central partner in the tri-campus University of Toronto system, the composition and mix of the student community will also evolve. Graduate students will grow four fold to 1000 students and many of these students will be accessing this new facility. In particular, innovative professional graduate programs in environmental science and management will bring practicing professionals back to the campus who will expect facilities in keeping with the mature nature of their educational program.

Together, university programs, services, and transit, will draw thousands of individuals daily to this new apex of UTSC. As well, if the City of Toronto bid for the Pan American Games is successful, the Instructional Centre will be situated with a major athletic facility located within 500 metres to the north. As a thriving hub, the area has the potential to be an important catalyst for rejuvenation, attracting further public and private investment to the eastern region of the Greater Toronto Area.

b) Space Program and Functional Plan

It is widely accepted that both learning and teaching strategies have been deeply influenced by new information and communications technologies. The most visible manifestations of these influences are networked classrooms with electronic podiums and the omnipresence of laptops and workstations in libraries and study spaces. Less obvious is a change in the ways in which knowledge is obtained and assimilated. The traditional, relatively slow, systematic, linear acquisition of knowledge through reading academic texts, going to lectures and taking notes which are reviewed at the end of the term prior to writing an exam, is giving way to a non-linear browsing of interactive web sites offering diverse and possibly contradictory information, combined with fragmented discussions by e-mail, cell phone or in person with other students, faculty or TAs.

More broadly, it appears that every space on campus now has to be considered a potential learning space – corridors, cafeterias, lounges, patios, anywhere with a wireless signal or where text messages can be sent and received. The university must ensure all its spaces are safe and secure, conducive to learning, with power outlets and broad-band wireless, and generally provide settings for student interaction with peers and professors.

Because the character of instruction, and the demands of both instructors and students, are changing so rapidly, it is essential that where possible the interior of this building be designed to be flexible and to permit relatively inexpensive modifications to walls and space arrangements in the future. The design of the building should be based on current theories of the design of teaching and learning environments, coupled with design strategies that will facilitate adaptations and changes to those spaces in the future.

The space program for the Instructional Centre has been developed both on the basis of immediate and projected steady state demand for particular types of space, and with attention to possibilities for the resolution of space problems throughout UTSC. Acute space shortages in classrooms and limited opportunities for capital expansion have made it necessary to scrutinize space allocations across the campus, and to use this building to resolve shortages indirectly.

Classrooms

All classrooms and instructional space in the building will be controlled centrally and are considered general campus resources. Classrooms should be located in clusters, and should be well designed and fully accessible. Natural light should be provided through windows or skylights in classrooms seating 40 to 120 students.

In general, classrooms should have two aisles, one running on each side. Larger classrooms should have entrances at two levels: preferably one at the lower (teaching) level, and one at the top level. Two wheelchair accessible stations should be provided at both the lower and top levels.

Ample space must be provided in the front of classrooms, ideally a minimum of 10'-0". Classrooms in the new Instructional Centre should generally contain seating in rows with a continuous table surface and loose chairs. Aesthetically pleasing, acoustic wall treatments should be considered, especially in absence of carpet flooring. UTSC would prefer to use linoleum flooring in its classrooms for both its cleanliness and durable characteristics. Sound absorbent/padded seating should be specified.

Lighting should run in banks parallel to the front of the room. Smaller rooms should have a minimum of 2 general lighting levels through mixed banks: 50% and 100%. Larger rooms should have 2 additional zones for the teaching and blackboard areas. Lighting should be capable of accommodating specific uses: lectures, stage performance, announcements and video-projection/movies.

Two smaller classrooms are planned, at 60 nasm each. They will be used to host presentations, meetings and to accommodate small classes. Seminar rooms should have natural light and operable windows. The rooms will have modular furniture that can be arranged to create lecture-style seating, a central meeting table, and smaller break-out areas. One of these rooms should have full video-conferencing capability.

Dry Teaching Labs

There are 5 teaching labs planned for the building. These will be primarily computer/technology-based labs, with 2 labs sized at 50 nasm each, 2 at 130 nasm, and 1 lab at 40 nasm. These labs will require a high level of IT infrastructure, an anti-static floor finish and individual thermostat control to accommodate the high number of computers.

Research Facilities

The research facilities planned for the building will be primarily used for computer/technology-based research and will require no wet servicing. The rooms are to be equipped with moveable computer stations and will require a high level of IT infrastructure, an anti-static floor finish and individual thermostat control.

Student Study Space

The shortage of good quality study space at UTSC is identified as a significant concern for students. About 300 of the study carrels and tables are currently located in the internal streets and corridors of the Humanities wing and the Sciences wing. There are serious shortages of student lounge spaces with soft furniture, which are often used for more informal types of study and are very important for student experience.

This project will add about 8 undergraduate study rooms, at 14 nasm each. These rooms will provide tables with seating for 6-8 students and be fully wired. The rooms will have natural light and acoustically-appropriate materials to create a quiet and comfortable work environment

In addition, 140 individual and collaborative study spaces will be provided in designated enclosed rooms, located throughout the building, totaling 160 NASM. These spaces will be fitted out with study carrels and appropriate acoustic finishes.

Faculty Offices

The new facility will accommodate space for faculty and area support staff offices, and area support spaces (meeting space, lounges, storage). Faculty offices and associated spaces should be organized in clustered areas to allow each departmental “area” a clear and identifiable locus.

Offices are planned at 12 nasm in size, and should have operable, exterior windows, and transoms or sidelights to bring light into interior corridors.

Administrative offices

In general, administrative staff offices will be clustered together by function and should include all required support space within their immediate area. Those administrative functions that require easy access by students and faculty members will require careful planning in order to provide adequate presence in the building, while maintaining a coherent plan. Those functions that require security due to the confidentiality requirements for records management also need careful planning to achieve efficiency in the use of shared workspaces. Shared access to records or materials will be an overall concern for administrative staff in this area.

Offices are planned at 12 nasm in size. Offices should have operable, exterior windows, and transoms or sidelights to bring light into interior corridors.

Co-op Services

A total of 557 nasm has been allocated for Co-op services. This space will house a core operation area, including a reception and staff offices, and provide 8 employer interview rooms, and numerous seminar, presentation and resource rooms for student development. Co-op services should be conveniently located near the entry of the building, and close to food services. It is expected that Co-op services will make use of

the atrium space to hold events for up to 200 people. Designated visitor parking must be in close proximity to the building.

Restaurant and Coffee Shop

The space program for the Instructional Centre includes 250 nasm for a wireless internet café service, approximately equivalent in size to the food services outlet in the S-Wing, and 270 nasm for a full-service restaurant. These food service areas will be shelled space, but not fitted out. Both food services will require the provision of adequate power (minimum 250 amp, 120/240 volt, with generous circuit panel) ¾" hot and cold water supply, 4" sanitary drain with grease interceptor and accessible cleanout). Suitable ventilation and storage will be required. Provisions for all these services should be roughed in. Detailed design and installations will be completed by the vendors.

The food services must be located suitably for delivery of supplies and removal of waste/recycling. They are to be located on the main floor. Seating for the food services will be bistro style in the atrium or other public areas of the building.

Space Program

# ROOMS	ROOM DESCRIPTION	NASM PER ROOM	NASM
CLASSROOM FACILITIES			
	Centrally Allocated Classrooms		
2	Lecture style rooms, capacity of 25 students; 1 room set for videoconferencing	60	120
2	40 seat, tables & chairs;	80	160
2	MGT Skills rooms 40 seat, circular tables & chairs	80	160
4	60 seat, horseshoe, tiered, continuous tables & chairs	130	520
1	80 seat, continuous tables, horseshoe	176	176
1	120 seat, tiered, continuous tables and chairs	204	204
1	350 seat, continuous tables, tiered	595	595
	Classroom support space		50
			1,985
TEACHING LABORATORIES AND SUPPORT FACILITIES			
1	MGT Communications Lab	50	50
1	MGT Data Modeling Lab, 65 students	130	130
1	CMS Math/Statistics Help Lab	50	50
1	CMS Computer Science Lab	130	130
1	CMS Electronics Lab	40	40
			400
STUDY ROOMS & SPACES			
8	UG Group Study Rooms	14	112
	Other study spaces		160
			272
FOOD OUTLET AND STUDENT LOUNGE			
	Coffee Shop		250
	Restaurant		270
			520
IITS			
1	ITTS Data Centre; include CMS servers	100	100
1	System and Network Administrator Office, shared	20	20
1	Av and Computing Support Office, 6 stns	90	90
1	Storage Room	30	30
			240
LOADING DOCK			**578**
	Stores		
	Shipping and Receiving		
	Garbage		

# ROOMS	ROOM DESCRIPTION	NASM PER ROOM	NASM
FACILITIES STORAGE ROOM			**250**
ACADEMIC DEPARTMENT: CMS			
	Office Facilities		
1	Departmental Chair's Office	24	24
35	Faculty Offices	12	420
4	Post Doc/CLTA Offices	12	48
4	Graduate Student/Sessional Offices (shared)	12	48
4	Non-Academic Dept Staff Offices	12	48
	Departmental Support		
1	Storage Room (in department)	12	12
1	Mail/Photocopy room	12	12
	Meeting Rooms		
2	UG TA Meeting Rooms	12	24
	Lounges		
1	Faculty/Graduate Student Lounge	50	50
			686
ACADEMIC DEPARTMENT:MGT			
	Office Facilities		
	Offices		
1	Departmental Chair's Office	24	24
53	Faculty Offices	12	636
1	Academic Group Office - Sessionals, 5-6 stns	36	36
5	Post Doc/Research Assoc Offices	12	60
6	Graduate Student Offices	12	72
1	Departmental Student Association Office	30	30
12	Non-Academic Dept Staff Offices	12	144
1	Non-Academic Dept Staff Office	15	15
	Departmental Support		
1	Storage Room	12	12
1	Mail Room	16	16
1	Photocopy Room	12	12
1	Reception/Waiting Area	24	24
	Meeting Rooms		
1	Board Room	100	100
5	TA/Sessional Meeting Rooms; design as regular offices	12	60
	Lounges		
1	Departmental Lounge, 40 people	50	50
	Research Facilties		
1	Research Lab	85	85
1	Research Lab	50	50
1	Observation Room	10	10
5	Research Assistant Offices	12	60
1	Waiting Room	12	12
			1,508

# ROOMS	ROOM DESCRIPTION	NASM PER ROOM	NASM
CO-OP: A&S and MGT			
2	Director Co-Op Office	15	30
22	Non-Academic Co-Op Staff Offices	12	264
1	Reception/Waiting, area 5 workspaces & other	65	65
1	File Room, Storage, Photocopier	18	18
8	Interview Rooms	10	80
1	Kitchen area	10	10
2	Resource Room, 15 Computers & Display	45	90
TOTAL CO-OP			**557**
TOTAL NEW INSTRUCTIONAL CENTRE, PHASE 1A			**6,996**

Non-Assignable Areas

The non-assignable spaces include corridors, stairs and mechanical stacks. These aspects of the building program are to be accommodated within the net to gross factor of 2.0. The architect will get further details from Facilities Management and other relevant departments at UTSC. Specific requirements that have to be met in non-assignable spaces are the following:

- An atrium space, located near the entrance. The atrium should be capable for use as event space with an ideal seating capacity of 150, or standing capacity of 200.
- janitor closets on each level, complete with slop sink and adequate storage for supplies as well as room for caretaking carts. One room in the building large enough to accommodate a floor polisher
- lunch rooms – for various unionized staff (CUPE, USW, CAW)
- change rooms for staff
- network closets on each floor
- delivery area in basement, 5 ‘docks’ for transport vehicles. Clearance into space to be 13’ 6” minimum (transports are taller than they used to be)
- enough space to maneuver truck with 53’ trailer inside at loading dock
- washrooms on each floor
- penthouse to include condensers, and other associated mechanical equipment, easy access via elevator + stairs. Outdoor cooling towers behind a walled façade.
- boiler room in basement with associated equipment
- 2 elevators, one designed to carry freight (both machine-roomless, non hydraulic)

The net to gross multiplier is 2, with 6,996 nasm resulting in a building with a gross area of 13,992 square metres.

A space program reconciliation, prepared by the design consultants, will be required at the end of schematic design, design development and prior to completion of working drawings.

c) Building Considerations

Building characteristics and massing

The new building is planned to be four stories in height, and will include a full basement. It is conceived of as having one central block, with a secondary block or wing for the larger classroom. The University wishes to promote activity at the ground floor, thus more than one exterior entrance should be considered as a means to animate this level. Public functions, including food services, should be able to operate as "storefronts", and should have direct openings to the exterior. Local materials should be used where possible, for both interior and exterior components and spaces. High quality, durable finishes are required.

A mechanical penthouse will be required. Primary occupants at the basement level will the Loading Dock/Shipping & Receiving, IITS and storage.

The floor to floor heights are to be: basement 4.2m, level 1 5.5m and 2^{nd}-4^{th} Floors: 4.2m typical.

Key Building Components and Systems

Mechanical/ Electrical and Data

A data connection must be provided from this building to the inner campus. Within the building, stand alone Data and Communications closets should be located one on every other floor. Electrical and Janitor's closets will also be required.

A stand-alone HVAC system is required. The boiler should be sized for an additional buildings or space should be provided to add a second boiler when required.

Accessibility

The building will be accessible throughout and meet all University standards. Fully accessible washrooms will be provided throughout. Entrances will be designed for universal access rather than employing specialized ramps.

At least one of the elevators must be large enough to accommodate scooters.

Personal safety and security

Personal safety must be taken into consideration in the design of the building.

The building will connect to the security system backbone which will run to a security closet on one of the middle floors. From here, security connections will be extended to high security areas, in particular the classrooms with elaborate electronic equipment and the Departmental offices. Included as part of the central security system, will be the installation of a public address system that will be connected to the campus public address system and Campus Police.

Card access is to be provided for all classrooms and perimeter exterior doors, and office areas. Classrooms are to use electrolocks.

Servicing

Each floor of the building will contain one janitors' closets. The closet on the ground floor (preferably) or at the basement level, must be about 2.5m wide by 6m long, (to permit storage of maids carts, floor scrubber machine and vacuums), and include a slop sink, one dedicated outlet for recharging equipment, and storage shelves. The other closets may be sized at a minimum of 1.5m x 3m and include a slop sink and storage. A separate area must be provided for garbage and recycling.

A minimum 3m x 3m tunnel connection to future buildings in this location should be planned for at the basement level.

Elevators

2 elevators are planned; one designed to carry freight (both machine-roomless, non-hydraulic)

Computing

This building will be fully connected to the campus fibre network. All classrooms are to have 4 data drops at the front of the room and a wireless connection at the ceiling level. All classrooms will have a wireless transmitter. All offices will have 2 data drops. In consultation with IITS at UT Scarborough, appropriate locations for wireless transmitters should be identified and transmitters installed to provide the widest possible coverage.

Redundancy should be allowed in the size of the conduits to permit for additional future cabling.

Sustainability design and energy conservation (LEED)

The Instructional Centre should be designed to meet the highest reasonable LEED standards, with Silver expected as the minimum standard. It will be environmentally sound in many different ways, including the use of recycled construction materials, locally manufactured materials, energy efficient lighting, heating and cooling, passive design to reduce heat gain, operable windows, sustainable high albedo roof or green roof, low flush toilets, materials from sustainable sources such as bamboo, low VOC paints and carpets, the use of storm water for irrigation, and attention paid to the minimization of non-recyclable waste during construction.

The design team should pay particular attention to:

- strategies to maximize the use of natural energy or passive strategies such as the use and control of sunlight, ventilating air movements, and diurnal and seasonal temperatures,
- minimize energy use for heating, cooling and lighting through the careful design of the building envelope, mechanical and electrical systems, and the use of low energy fixtures in combination with natural daylight and task lighting wherever possible,
- water conservation through the use of water saving fixtures and close-looped equipment cooling systems,
- metering of energy and water use in the building, or parts of it,
- building materials (e.g. drywall) , finishes (e.g. paint), furnishings (e.g. carpets), fixtures (e.g. lighting) and furniture which are not only emission-free (to provide building occupants with highest quality of indoor

environment) but are also the most environmentally friendly in their manufacture and installation,

- provision of recycling depots for source-separation of waste throughout the building to meet the needs of the University's recycling and waste reduction programs and vehicular access to these sites.
- conveniently and sufficiently locating waste receptacles to minimize litter buildup
- provision of appropriate food waste receptacles to contain the food service related garbage in particular given the new coffee shop and restaurant and kitchens, as well as local area kitchens in the space program
- creating a sufficiently large central area for the consolidation of and access to recycled materials and waste,
- ensuring that all kitchen facilities in the building have the proper exterior venting for heat and smoke
- directing rainwater (roof) runoff and other sources of 'gray' water to satisfy landscaping needs,
- using water penetrable systems in outdoor areas where hard landscaping is required to minimize flows to the City's storm water system (or into the building), and choosing paving materials to assist the University in minimizing the amount of salt used in snow and ice clearance,
- the design and structural reinforcement of roofs and access to them to permit use as an outdoor green space by building users
- the landscape design to promote local plant species that require low maintenance
- the design of outdoor spaces for all-season use, with shade and cool air movement for the summer, and sun-trapping and wind shelter for winter use, and sensitive accommodation of smokers away from the building entrances to reduce potential harm from second hand smoke.

The Committee recognizes that all of the above strategies may not be practical to implement. However, the design team and the building's users must make an earnest effort to ensure that this building, when viewed in its entirety, will satisfy the environmental goals set out by the University.

d) Site Considerations

Campus Planning Issues

The current UTSC Master Plan (developed in 2001) provides a framework that ensures new facilities, infrastructure and landscapes contribute to the physical quality, coherence and effectiveness of the campus. The initial strategy concentrated growth on south campus areas, in order to develop a critical mass of campus facilities that improved the vitality and quality of user experience. Under this plan, expansion responded to the needs of the double cohort and included the construction of a new Management Building, the Arts & Administration building, the Academic Resource Centre, the Student Centre, the Foley Hall student residence, and most recently, the Science Research Building.

The current Master Plan put in place a framework for coherent future expansion on the north campus area. UTSC has the land available for significant expansion. Currently,

core facilities exist on approximately one-quarter of the campus land holdings. The north campus is located along Military Trail, north of Ellesmere Road. The proposed location for the Instructional Centre was identified in the current Master Plan as a future development site on the north campus.

This development project marks the beginning of a new pattern at UTSC. Located at the intersection of Ellesmere Road and Military Trail, the development will establish a new gateway entrance to UTSC. It will coherently link, and facilitate movement between, the inner and outer campuses, and will enrich the urban fabric of this area of the city.

Consistent with the development of the north campus, current municipal and provincial planning is focused on the development of high-speed rapid transit to the campus. With the addition of efficient transit systems to UTSC, access to the campus will be greatly improved.

Zoning regulations

The site is zoned Institutional, with an “H”, or holding, zone designation applied. This designation was put in place to address environmental concerns, as well as typical planning issues such as traffic studies and servicing reports. The University and the City of Toronto are currently engaged in a process that satisfies the requirements to lift the “H” designation for the environmental concern. The remainder of the review will occur during Site Plan Approval and will require studies for transportation, planning and stormwater servicing. The City's review municipal process typically takes between 6 and 9 months. Campus and Facilities Planning has committed to work with the City's planning staff to substantially improve the review schedule to allow for the project to be expedited in response to the completion requirement set out under the terms of the government funding grant.

Real Estate Operations has initiated the selection of consultant teams and are committed to have teams in place and with adequate time available to prepare complete applications necessary for construction permits for excavation and foundations for City planners to process to maintain the aggressive schedule necessary.

Site boundaries, conditions and constraints

The site is located in what is currently Parking Lot 1, at the northwest corner of the Ellesmere and Military trail intersection. Although the site is flat at this location, the topography descends quickly to the west. Given the proximity to the ravine protection and top-of-bank lines, side slope stability must be considered during excavation.

It is anticipated that a new light rapid transit line will be implemented in the coming years. Current planning has indicated that the line will run north along Morningside to Ellesmere, turn east onto Ellesmere, followed by a turn north onto Military Trail (or create a new transit corridor east of Military Trail), before returning to Morningside. Transit stops will be located approximately 500m apart: a minimum of 2 stops are expected for UTSC, with an additional stop for Centennial College. Given the prominence of the Ellesmere and Military Trail intersection, it is presumed that a transit stop will be located here. Although the details of the transit line are not in place, it is important that the new building locate its entrances in anticipation of its arrival.

The site is highly visible from all directions, due to its location at a busy intersection and lack of surrounding built-form context. As the first building on the north campus lands,

the Instructional Centre should set the stage for urban, pedestrian-scaled development and create civic gestures in all directions. Since the current master planning exercise is seeing Military Trail as the urban focus of the emerging north campus, the building should be designed to complement this, with its principal entrances and an urban façade along Military Trail. The Ellesmere frontage, with its topographical change of elevation, should be treated as a landscape feature. Vehicular access should be off Military Trail, at the northwest end of the building parcel. The building should be set back to create a sidewalk condition that will become a comfortable pedestrian environment along Military Trail, with grade-level design and uses that complement it. The setback and grade-level approach will provide the urban design direction for forthcoming buildings on Military Trail and should be developed with that knowledge. The design of the corner of the building should anticipate that the intersection of Military Trail and Ellesmere road will in the future become a principal focal point of the expanded campus. The prominent location and nature of this "flat-iron" building parcel calls for a thoughtful, high quality and distinctive architectural approach. This exercise is expected to move beyond the building's specific boundaries and include re-scaling and re-working this main thoroughfare.

Site access

The site is situated on the northwest corner of Military Trail and Ellesmere Road. This intersection is often busy, with university-created pedestrian and vehicular movement, and non-local city traffic along the Ellesmere thoroughfare. The main UTSC parking lots are located directly across from the site on the eastern side of Military Trail.

Ellesmere Road quickly drops in elevation to the west, down the ravine edge to Morningside Avenue. Vehicular access to the site is therefore best served from Military Trail.

Pedestrian traffic will originate from the south campus, the main parking lots, and from Centennial College. Pedestrian traffic is expected to cross at the main Military/Ellesmere intersection, although pedestrian crossings along Military Trail may be necessary in the future to provide multiple direct routes from the parking lots. The physical quality of these crossings should be reviewed and designed or redesigned to provide maximum pedestrian comfort, safety and clarity (within the context of the forthcoming LRT).

Demolition of existing structures
No existing structures exist on the site. It is undisturbed, for the most part, although there may be the remains of one or two foundations/basement walls from old residences that used to be on the site. Drawings and specifications for this project will include for their removal if encountered.

Site servicing; existing and proposed
Existing site servicing currently only consists of irrigation piping + electrical services (LV electrical + communications) for parking gates. These will have to be relocated in the coming months, as all gates are to remain operational throughout construction.

Environmental issues, regional conservation, Ministry of the Environment
The site will require input from TRCA in the Site Plan Approval process, as “top of bank” is relatively close. Stormwater management and runoff will also be reviewed, possibly utilizing a stormwater pond as part of the Site Plan Application.

Hazardous waste disposal
Studies have indicated that no hazardous waste exists on this site, nor is there evidence of methane migration.

e) Campus Infrastructure Considerations

New infrastructure will be required, including a new electrical service. The hydro ductbank infrastructure crossing Military Trail is to be sized for two buildings. Power is available from opposite side of Ellesmere Road. A road crossing will be required. Provisions for power, data and telephone to the second building should be made in the conduit rough-in.

Water and gas must also be brought to the site from Military Trail, similarly sanitary sewers. Storm runoff will have to managed through a stormwater pond or cistern

The entrance to delivery area/loading dock should be accessed via a ramp to be located at rear of building and away from general view. Bicycle parking must be provided in a convenient location, near the entrance.

f) Secondary Effects

Parking
There is currently a surplus of parking spaces over By-Law requirements on campus. The new Instructional Centre will not require the construction of additional parking. Moreover, the review of the campus Master Plan that is currently underway will include discussions of the Parking By-Law to be more in line with environmental considerations and promote the use of transit.

Overall demand as a percentage of enrolment has been declining over the past few years and it is projected that there will still be a surplus of 110 permits in 2010-11.

The site for the new building will result in the loss of approximately 250 spots in parking Lot 1. An additional 250 spaces will be temporarily displaced during construction. To compensate, the graveled portion of 'General Parking Lot 4 across the street (432 'new' spots + 108 'existing' around perimeter) will be used to accommodate the displaced spaces.

Impact on other university units, relocation or reallocation of occupants
The relocation of a number of academic and administrative departments, or portion of academic departments, to the New Instructional Centre, Phase 1A will permit the relocation and consolidation of other academic departments, or portion of academic departments, within the existing buildings. Vacated space in existing buildings will also be an opportunity to create high quality study spaces and possibly to relocate administrative units.

g) Schedule

Planning & Budget meeting	May 7, 2009
Approval initial expenses	week of April 13th, 2009
Business Board meeting	June 18, 2009
Integrated Team Selection	week of April 20th 2009
Construction Start on Site	July 2009
Material Completion	March 2011
Full Occupancy	September 2011

IV Resource Implications

a) Total Project Cost Estimate

The total estimated project cost for the Instructional Centre (13,992 gross square meters or 6,996 nasm) is $78,000,000, which includes estimates or allowances for the following:

- Design and construction by an integrated team.
- Construction and project contingencies
- Presently applicable taxes – not including any potential impact of the implementation of HST in mid 2010.
- Site servicing
- Landscaping within site
- Permits and insurance
- Professional fees, architect, engineer, misc consultants (ie. LEED etc.), project management.
- Computer and telephone terminations
- Moving
- Miscellaneous costs [signage, security, other]
- Commissioning
- Donor recognition
- Financing costs during design & construction. refer to cashflow estimate available upon request.

Further assumptions within the total estimated cost for the project of $78,000,000, to be identified separately, are as follow: landscaping, loose furniture, computer equipment , audiovisual equipment, signage and wayfinding, donor recognition ceremonies and financing costs during design and construction.

b) Operating Costs

The total operating costs are estimated to be between approximately $1.0 and $1.2 million annually for 13,992 gsm planned to be constructed. This includes utilities and maintenance costs as well as engineering, caretaking, security, and maintenance staffing costs.

c) Funding Sources and Cash Flow Analysis

The total estimated project cost for the UTSC Instructional Centre Phase 1A is $78,000,000. This project is being submitted under the federal Knowledge Infrastructure program, identified as the UTSC Instructional and Laboratory Centre requesting a total of $70 million from both the federal and provincial governments for Phase 1A of this project. To fully fund the balance of the Instructional Centre Phase 1A, UTSC will contribute a lump sum of $8 million at the start of the project. No borrowing is required.

It is recommended that the Planning and Budget Committee recommend to the Academic Board:

1. THAT the Project Planning Report for the University of Toronto Scarborough Instructional Centre Phase 1A be approved in principle.

2. THAT the project scope, comprising approximately 7,000 net assignable square metres (13,990 gross square meters) at a total project cost of $78,000,000 be approved, subject to receipt of funding.

APPENDICES:

9. 2007/2008 UTSC Space Requirements as measured by COU Space Standards
10. AV/IT Equipment schedule
11. Room Specification Sheets (on request).
12. Total Project Cost Estimate (on request to limited distribution)
13. Cash Flow Analysis (on request to limited distribution)
14. Project Scope Document for Cost Consultant (on request)
15. Design Criteria for Classrooms, revised 2009
16. Campus Planning Principles

Appendix 1

Table 21
Institutional Space Requirements As Measured By COU Space Standards, 2007-08

TORONTO (SCARBOROUGH)

	Input Measure	Space Factor	Generated Space	Inventory	% I / G	System Average	*2004-05 % I / G*
TEACHING/RESEARCH/ACADEMIC SUPPORT							
CLASSROOMS							
Total FTE Students	8,530.70	1.23	10,492.76	5,112.63	48.7	76.4	*60.6*
CLASS LABS							
Lab Contact Hours W	0.00	0.8	0.00	0.00			
Lab Contact Hours X	13,808.00	0.6	8,284.80	3,853.66			
Lab Contact Hours Y	1,137.00	0.5	568.50	254.76			
Lab Contact Hours Z	126.00	0.3	37.80	255.83			
Unclassified	0.00			0.00			
Total Class Lab	15,071.00		8,891.10	4,364.25	49.1	64.7	*74.4*
RESEARCH							
Research Disciplines A	105.34	45.0	4,740.30	3,386.51			
Research Disciplines B	35.00	30.0	1,050.00	792.97			
Research Disciplines C	10.65	20.0	213.00	194.06			
Research Disciplines D	31.40	10.0	314.00	0.00			
Research Disciplines E	164.84	1.0	164.84	310.97			
Unclassifed	0.00			0.00			
Total Research	347.23		6,482.14	4,684.51	72.3	74.7	*104.6*
OFFICE - ACADEMIC							
Total FTE Faculty	255.24	13.0	3,318.06	3,760.83	90.7	89.5	*101.6*
Faculty Supplement	38.29	13.0	497.71				
Research Appointments	37.08	13.0	482.04	138.77			
Total FTE Grads	153.90	4.0	615.60	888.07	144.3	53.1	*432.4*
Total FTE Non-Acd Staff	67.45	13.0	876.85	586.76	66.9	108.2	*66.9*
Office Service	5,790.25	0.25	1,447.56	449.75	31.1	85.3	*39.3*
Total Academic Office			7,237.82	5,824.18	80.5	83.3	*96.8*
OFFICE - ADMINISTRATIVE							
Total FTE Non-Acd Staff	204.02	13.0	2,652.26	2,306.46	87.0	96.1	*95.1*
Office Service	2,652.26	0.5	1,326.13	1,405.66	106.0	103.1	*84.7*
Total Admin. Office			3,978.39	3,712.12	93.3	98.4	*91.6*
Total Office - Academic & Administrative			11,216.21	9,536.30	85.0	86.7	*95.0*
LIBRARY FACILITIES & CAMPUS STUDY SPACE							
Study (Total FTE Students)	8,530.70	0.6	5,118.42	3,121.90	61.0	53.8	*62.3*
Traditional Static Shelving Space	269,416.73	0.005	1,347.08				
Mobile Compact Shelving	51,263.96	0.004	205.06				
Super High Density	0.00	0.0035	0.00				
Total Stack	320,680.69		1,552.14	1,527.36	98.4	83.9	*93.3*
Library Support	6,670.56	0.25	1,667.64	771.40	46.3	79.5	*71.9*
Total Library Facilities & Campus Study Space			8,338.20	5,420.66	65.0	70.6	*71.2*
SUB-TOTAL: TEACHING/RESEARCH/ACAD SUPPORT			**45,420.40**	**29,118.35**	**64.1**	**76.5**	***78.7***
OTHER SPACE							
RECREATION / ATHLETICS							
Under 4,000 FTE Enrol.	0.00						
4,000-8,000 Enrol.	0.00						
Total FTE Students	8,530.70	0.9	7,677.63				
Total P.E./Athletics			7,677.63	4,414.81	57.5	68.1	*55.2*
MAINTENANCE SHOPS							
Total NASM Inv. (exc. 16.0)	59,428.76	0.015	891.43	1,736.76	194.8	77.0	*74.9*
STUDENT AND CENTRAL SERVICES							
Total FTE Students	8,530.70	2.0	17,061.40	7,636.33	44.8	54.7	*45.2*
SUB-TOTAL: OTHER SPACE			**25,630.46**	**13,787.90**	**53.8**	**60.1**	***49.6***
TOTAL FORMULA AREAS			**71,050.86**	**42,906.25**	**60.4**	**72.2**	***67.4***

Appendix 2

AV/IT Equipment Schedule

Instructional Centre and Lab Complex - Classrooms AV Budget

100+ seat classrooms

COMPUTER	MAIN SCREEN	SECONDARY SCREEN	LCD PROJECTOR	PODIUM	DVD/VHS	AUDIO	HEARING ASSISTANCE	CRESTRON CONTROLS	SCISSOR LIFT	ELECTRICAL INSTALLATION	ROOM TOTALS
$1,050.00	$2,575.00	$2,575.00	$7,600.00	$5,966.00	$200.00	$2,400.00	$2,115.00	$10,590.00	$8,500.00	$5,500.00	**$49,071.00**

Annual staff/support (per room, per year)	$2,721.00
Annual maintenance ("Evergreen") cost (per room, per year to maintain equipment)	$3,400.00
Annual maintenance for servers & software	$2,475.00

36-100 seat classrooms

COMPUTER	MAIN SCREEN	SECONDARY SCREEN	LCD PROJECTOR	PODIUM	DVD/VHS	AUDIO	HEARING ASSISTANCE	CRESTRON CONTROLS	SCISSOR LIFT	ELECTRICAL INSTALLATION	ROOM TOTALS
$1,050.00	$2,575.00	NA	$7,600.00	$5,000.00	$200.00	$2,400.00	NA	$5,000.00	NA	$5,500.00	**$29,325.00**

Annual staff/support (per room, per year)	$2,721.00
Annual maintenance ("Evergreen") cost (per room, per year to maintain equipment)	$1,470.00

Teaching labs

COMPUTER	MAIN SCREEN	SECONDARY SCREEN	LCD PROJECTOR	PODIUM	DVD/VHS	AUDIO	HEARING ASSISTANCE	CRESTRON CONTROLS	SCISSOR LIFT	ELECTRICAL INSTALLATION	ROOM TOTALS
$1,050.00	$2,575.00	NA	$7,600.00	$2,500.00	NA	NA	NA	NA	NA	NA	**$13,725.00**

Annual staff/support (per room, per year)	$2,721.00
Annual maintenance ("Evergreen") cost (per room, per year to maintain equipment)	$1,470.00

Appendix 7

DESIGN CRITERIA FOR CLASSROOMS
UNIVERSITY OF TORONTO 2009

MANDATE

The University is committed to providing classrooms that are physically supportive of instructors being able to effectively teach and students being able to effectively learn. At a minimum, all students must be able to see and hear what is being presented and must be comfortable. The full 5th-95th percentile of adult human physical dimensions are to be accommodated in the design and furnishing of classrooms (for details of what this entails, see the appended document based on Ergonomic Workshop – How We Design and Who We Design For from California State University).

GUIDING PRINCIPLES

Criteria in this document are intended to augment the Ontario Building Code (OBC), not to re-state the criteria therein.

The siting and placement of classrooms will respect and facilitate the University's standard 10-minute turnover time between classes.

Classrooms are to be located so that they are able to be accessed 24/7.

General "universal design" principles are to be implemented in classrooms.

The design of the rooms will provide sound isolation between adjacent spaces and minimizes other extraneous sound (e.g., noise in the HVAC system or sound from ground level vibration of the transit system) penetrating the rooms.

Image projection and chalkboard capacity are to be maximized within comfortable viewing distance.

The podium will facilitate the use of electronic and non-electronic media as appropriate to the room and not interfere with the sightlines of any student.

The room lighting will facilitate all of the intended functions of the room (chalkboard illustration and notation, note-taking by students, image projection by the various media as described in the room data sheets). Lighting controls are to be simple and straightforward to use.

The media provided and accommodated in each room will be appropriate to the size and type of classroom as well as the anticipated course delivery style.

Classroom finishes are to be selected with durability, ease of maintenance and appropriate acoustic properties in mind. While colours bring some "life" to the room,

they are not to be distracting nor the focus of the room. A “timeless” quality is preferred over a look that will become dated.

Where possible, classrooms are to be designed to also facilitate testing.

All classroom furnishings are to come with a minimum10-year warranty.

All classrooms are to be “support capable”, that is, the systems installed will not be proprietary but among those recommended and supportable by the Office of Space Management and Computing and Networking Services (CNS).

1 SITING AND PLACEMENT OF CLASSROOMS

1.1 PLACEMENT OF CLASSROOMS

Scheduling of classrooms is such that while one class is exiting another class is entering and all of this movement must occur within a 10-minute window many, many times a day (this 10-minute window includes travel time to and from the room and the building so exiting must be very efficient).

Classroom buildings will be located in proximity to locations to and from which the students are likely to be travelling.

Classrooms within buildings are to be clustered and positioned to provide ready access to/from the building entrances and exits.

1.2 ENTRANCES AND EXITS

Doors opening into classrooms of all types are to be a minimum of 915 mm (3’0”) wide. In the case of double doors, each entrance will have at least one leaf that is 915 mm (3’0”) wide.

Doors to all classrooms are to have narrow vision panels so that one (including someone using a wheelchair) can see into the room to know if the room is occupied prior to opening the door. The vision panel is to be sized and the door positioned to minimize light spill into the room.

1.3 CRUSH SPACE

Adequate “crush”, or circulation, space immediately outside of the classrooms is essential to the proper functioning of the classrooms.

The bulk of this crush space is to be located near the primary entrance(s) to the room.

A classroom of x nasm requires approximately the same x net square metres of crush space (this space, however, remains part of the gross-up for the building).

This crush space is to be free of obstructions such as lockers, exhibits or food services; these facilities, which may well be adjacent to the crush space, must reside in space of their own.

The design of the crush space will facilitate unimpeded traffic flow.

1.4 PROVISION OF WASHROOM FACILITIES

Washrooms to serve the classrooms are to be located immediately adjacent to the crush space.

There will be sufficient fixtures to accommodate the peak load on these facilities within the class turnover period. This fixture count will be considerably higher than that specified in the building code. What appears to work for classroom situations is one fixture per 30-40 seats (the larger number of fixtures in female dominated faculties); this concentration of fixtures adjacent to the classrooms, however, will not reduce the number of fixtures that will be available in other areas of the building.

The proportion of male to female fixtures will reflect the proportion of the anticipated users of the rooms, if known.

Single user accessible washrooms are to be provided near classrooms (accommodating the transgendered as well as the disabled).

1.5 SECURITY

Locking and unlocking of classrooms is part of a centralised security system. Projector lifts are to be used wherever possible

2 SOUND

2.1 ACOUSTICS, SOUND TRANSMISSION AND MECHANICAL NOISE

The acoustics of the room are to be such that speech and audio are easily heard and understood from every seat. Background mechanical noise and noise from adjacent spaces are to be minimized such that they will not cause distraction within the classroom.

Classrooms are to be designed to prevent sound transmission between the classroom and all adjacent and adjoining spaces (Sound Transmission Class to be STC 50 or greater, as determined by acoustic consultant). Particular attention is to be paid to openings in walls and ceilings in order that the STC rating is maintained across all openings.

Doors are to be acoustically rated and sealed; door closers and any exiting hardware are to be operationally “silent”.

Doors are to be positioned such that disturbance of the class by latecomers is minimized.

Noise criteria levels in classrooms are not to exceed an NC Rating of 25, measured at 4’0” above the finished floor at all points within the room, or as determined by acoustic consultant.

A report is to be provided, prior to tender, by the project's acoustic sub-consultant verifying that the classrooms as designed meet or exceed the requirements within this document. Those responsible throughout construction are to be diligent to ensure that these criteria in the finished classrooms match those determined in the design stage.

2.2 VIBRATION CONTROL AND MAGNETIC INTERFERENCE

Classrooms are to be designed to prevent vibration transmission (and any resulting sound transmission) and magnetic interference from all nearby generators of same (e.g., subways, streetcars, etc.).

3 SIGHTLINES

3.1 ROOM PROPORTIONS

A compromise must be made in the proportions of classrooms between the wider, shallower room preferred by faculty in order that they can be closer to the students in the most distant seats and the longer, deeper room that provides the best sightlines to the front wall of the room where the course material will be presented. The compromise position is to make the room as square as possible.

3.2 90° CONE OF VISION

While there are several ways of calculating the required 90° cone of vision, the minimum accepted method for new lecture-style classrooms at U of T is the single 90° angle drawn from the centre of the front wall of the room.

The ideal would be multiple measurement calculations that result in every seat being within a 90° cone from all points of the screen and chalkboards, not just the centre point.

In case rooms and horseshoe-shaped seminar rooms only, a maximum of 18% (but preferably fewer) of the seats are permitted to be outside of the 90° cone. Case rooms and horseshoe shaped rooms should be programmed only when the intended use of the room requires this shape, as other principles will necessarily be compromised if these rooms are used as standard lecture rooms.

3.3 VERTICAL RISE

The rake of tiered seating must permit the occupant of every seat unobstructed view from the floor at the front of the room to the top of the projection screen (angle of view to be maximum -55° off the horizontal to the floor and maximum +25° off the horizontal to the top of the projection screen).

Vertical sightlines must take into account the possibility that the lecturer may be using a wheelchair or be of short stature.

3.4 FLAT FLOOR SIGHTLINE CONDITIONS

The ceiling height in a flat floor or small tiered room must be such that the lower edge of

the projection screen is no lower than 6’0” above the floor.

Provide absolutely no more than 7 rows of seats (and preferably fewer) in a flat floor classroom.

3.5 AISLE LOCATIONS

Differing priorities come into play in determining the optimal location of aisles within classrooms. Some faculty prefer a centre aisle that they can walk up and down during their presentation. However, the best-seats-in-the-house tend to be those that would be provided in the space otherwise consumed by a centre aisle. For this reason, the preferred location for aisles would be anywhere except running up the centre of the room. The request for a center aisle in seminar room may be met by using a case or horseshoe style layout.

4 AUDIO VISUAL

Classrooms are to be on a network separate from departmental or faculty networks within the building.

A/V provisions in specific rooms will be guided by what is contained within the room data sheets for those rooms.

4.1 PROJECTION

At least 2 m2 of blackboard surface is required to remain available for use beyond the lowered projection screen; where this is not possible a second “corner” projection screen is required for overhead projection so that the blackboard can be used simultaneously with projected material.

For large or tiered lecture rooms, the minimum width of the projection screen is to be 0.25 times the maximum distance from centre of the front wall of the room to the furthest viewer and the corresponding height of the screen will be based on a this width and the height of the room; the screen needs to be able to accommodate both wide-screen format and standard format projection. All students must be able to see the entire image regardless of format and projection device.

The position of the bottom edge of the retractable projection screen will vary depending what media is being used (e.g., overhead projector vs. data projector). Therefore the screen must be sufficiently long to accommodate the variety of projection equipment and must be able to be raised and lowered such that it will come to a stop at any point along the way.

Fixed projectors are to be positioned so that the image fills the projection screen.

In large tiered rooms the projector must be securely housed on a projector lift that will bring the projector within reach for maintenance.

Screen housing to be mounted inset in drop ceiling, were practicable.

Projectors are to be positioned 6” below the top of the projection screen to prevent keystoning.

The room designer must ensure that the selected screen size for any room will permit the typical size fonts that are found on websites and in PowerPoint presentations to be clearly readable from every seat in the classroom.

For lecture halls where student stations are fixed, the front row of seating is to be no closer to the screen than the dimension of the minimum width of the projection screen.

Large, retractable projection screens are to be tab-tension screens electrically controlled via the touchscreen at the podium.

Small retractable screens will be manually controlled.

4.2 AUDIO

A voice amplification system is required in all tiered classrooms and large (75 seats or more) classrooms as well as a separate sound system for the amplification of soundtracks through the media equipment used in the room

All rooms that have permanently installed a/v equipment must have a minimum of two audio speakers installed in the ceiling of the room (the number of speakers will increase appropriately as the room size increases- the precise location and numbers of speakers to be determined in consultation with the project’s acoustic consultant)

4.3 CHALKBOARDS AND WHITEBOARDS

Chalkboards (black) are preferred over whiteboards in teaching rooms; whiteboards will only be considered on a case by case basis and will be so indicated in the room data sheets.

To prevent chalk dust from interfering with electronic components in the room, the room ventilation is to be designed to draw air directly away from the chalkboards without passing over any other part of the room.

Chalkboards are to be continuous across the front of the room, permitting a portion of the chalkboard to be used simultaneously with the projection screen.

In the case of tiered classrooms, chalkboards are to be multi-tiered (triple-hung).

All chalkboards are to have a chalk tray all along the lower edge.

Bottoms of chalk trays are to be no lower than 36” and no higher than 39”above the finished floor, or raised platform if there is one (located as low as possible within this range, as determined by sightlines).

4.4 PODIUM (electronic) or LECTERN (non-electronic)

A podium and/or lectern is required at every lecture style classroom, regardless of room size.

The podium or lectern in a classroom must be designed to permit lecturers to refer to their notes and, in the case of the podium, to operate their laptop computers at standing height. It is to be positioned in the room to one side of the projection screen and blackboards so as to not interfere with the students' sightlines.

The 2007 document *Electronic Classrooms at the University of Toronto* recommends installation of the standard Teaching Station and classroom network in lecture theatres with a capacity of 100 or more. Lower capacity rooms to be considered for the station on a case-by-case basis.

LECTERN

Where there is no electronic equipment permanently installed in the room, a portable lectern stand with adjustable height is required.

PODIUM

*** The following requirements are included in the 2008/9 Standard UofT Teaching Station provided by the Office of Space Management (www.osm.utoronto.ca).

Adequate light must be provided at the podium so that notes are readable if/when the overhead lights are dimmed.

One duplex power outlet and two data ports are to be available at or near the top of the podium for laptops and any peripherals that the lecturer may bring in; in rooms where A/V equipment is not permanently installed, the power and data will be supplied at the front of the room.

A touchscreen with which to operate the room lighting, the retractable projection screen and the various A/V equipment that is permanently installed in the room needs to be secured, to prevent theft, to the top of the podium and within easy reach of the lecturer.

A portable, wireless touchscreen that can do all of the above will be available from the Office of Space Management to lecturers requiring its use.

Care is to be taken in the design of the podium that a glass of water or like substance, if spilled, will not cause any serious damage to any of the components of or within the podium.

A/V equipment stored in the podium will be accessible to the instructor by way of a keypad secured to the top of the podium; other electronic components of the podium are to be accessible only by a technician with a key.

Where required by room data sheets, the document camera will be housed in a drawer that pulls out of the side of the podium that is away from the centre of the room.

For detailed requirements, see appended document Electronic Podium Requirements.

5 LIGHTING

Control of chalkboard lighting is to be such that the chalkboard and the projection screen can be used at the same time with the chalkboard amply lit and there being no more than 3-5% spill on the screen

Placement of blackboard lighting fixtures to minimize the shadows created on multi-tiered blackboards

The design is to incorporate lighting fixtures that use bulbs that are readily available and economical; ease of maintenance (i.e., bulb replacement) to be considered in design.

Lighting is to be even throughout the seating area, regardless of whether the general, the dimmable or both types of lighting are energised.

Lighting in all classrooms will be 50-75 foot candles (538-800 lux) at maximum brightness throughout seating area (i.e., at every seat). The design minimum should be 65 fc (700 lux) in order to compensate for variation in results typically achieved in finished built rooms.

General lighting is to be switched in banks (generally, three: blackboard, and 2 zones on the main room body).

Dimmable writing lights are to be minimum of 50 foot candles at maximum brightness.

Lighting controls are to be as simple as possible and located on a wall near the front of the classroom (same side as podium) as well as on the touch screen where required.

6 SEATING

6.1 GENERAL SEATING CRITERIA

Seating in all classrooms is to be selected to achieve the following criteria:

The number of seats shall be as indicated in approved space programme and room data sheets, as determined by academic requirements.

Classroom seating will provide comfort to the occupant as well as be durable and easily maintained.

Furniture with sharp edges or exposed fasteners is to be avoided.

All points of moveable furniture that come into contact with the floor are to be non-marking.

6.2 DISTANCE BETWEEN ROWS OF SEATING

In order to minimise disruption of the class by students arriving late or leaving early, the distance between rows of seats must be adequate to allow passage of a person when seats are occupied regardless of the type of seating (in the case of tablet arms, when the tablet is in the writing position). For example, layouts with large tablet armchairs

require 1100 mm (43 1/2”) minimum depth of rows. Fixed tables are to allow minimum 29” (736mm) between table rows.

6.3 TABLET ARM CHAIRS

The minimum width of the seats to be no less than 21” (centre-of-arm to centre-of-arm). Include the maximum number of 24” wide seats that will work with the layout of the room.

The minimum required size of the retractable tablet is 200 square inches.

Portions of the tablet arm seating must either be easily removable (no tools required) so that wheelchairs can be parked in these vacated spaces or else permanent wheelchair spaces are to be provided in addition to the seat count required for the room. In the first case, the required seat count for the room will be provided when the spaces are filled with persons using wheelchairs/scooters.

6.4 CONTINUOUS WRITING DESKS

Continuous writing surfaces are to be cantilevered from support along the front edge rather than supported on intermittent gables.

Continuous writing surfaces are to be 18-20” (508mm) deep.

Each student station is to be 26” (660mm) wide; 36” wide for accessible stations.

Accessible stations are to be included by making a portion, or portions, of the continuous desks adjustable to accommodate the range of wheelchairs and scooters in current use or a standard chair for a person without a disability, as the case may be. Adjustability mechanism is to be operable from the wheelchair/scooter and require little effort.

Design continuous desks to have the modesty panel high enough above the floor that the students feet will not kick it and therefore destroy the modesty panel. Toe and knee clearance for a wheelchair will be provided at the accessible stations.

Continuous desks are to have no sharp edges and the construction of the desks such that they are not easily vandalized by students; the user edge will be rounded or bevelled for comfort.

6.5 INDIVIDUAL TABLES

Unless otherwise dictated by programme, standard tables in classrooms will measure 2’ x 4’ such that they can be used singly or combined for use with various sized groups.

Individual tables in tutorial rooms will measure 2’ x 3’.

6.6 POWER AND DATA AT SEATS

When power and data connections at seats are specified in the room data sheets:

Power and data ports at seats must be positioned such that they are easily

accessible from a seated position.

Where wireless connectivity is provided, the signal must be of adequate strength at every seat and the bandwidth provided adequate to the demand that will be placed on it.

7 MISCELLANEOUS

Access must be provided at the front of the room to accommodate a disabled lecturer (raised platforms are therefore discouraged unless they can be easily and effectively ramped)

Waste and recycling containers are to be provided outside of classrooms.

NOTES

Documents referred to:

4.4
Electronic Classrooms at the University of Toronto
Final Report by the Academic Computing Advisory Committee's
Subcommittee on Classroom Technology Standards
30 April 2007

Appendix 8

CAMPUS PLANNING PRINCIPLES

To ensure excellence in campus planning and design, directives that guide the University towards a systematic and comprehensive approach for evaluating design alternatives for buildings and grounds are necessary.

The general planning principles relating to campus planning, building design, site planning and landscaped open space to assist the University in various development proposals are identified below. This list incorporates the principles established in 1990 which were based on the principles approved in 1975 and 1983.

A. Campus Planning

1. It should be recognized that the University is set within an established urban environment and that campus development must fall within the parameters of the existing context and the planning of the Cities of Toronto and Mississauga and the broader GTA.

2. The development capacity of University of Toronto property should be fully realized, while respecting the integrity of the campus to support the University's academic endeavours.

3. The use of transit should be encouraged while co-operating with the Cities of Toronto and Mississauga in new endeavours to examine and rationalize parking.

4. The architectural and visual coherence of the campus should be sustained and enhanced by campus development.

5. Structures and outdoor spaces of historical, architectural, or environmental significance should be preserved.

6. The University's heritage and tradition should be enhanced and emphasized.

7. Unified academic communities should be planned with a fundamental framework of social and environmental amenities (e.g. child care, food services, recycling facilities etc.).

8. The expansion of campus-wide service networks, such as utilities and communications, should be integral to campus planning.

9. The University campus and global environment as set out in the Environmental Protection Policy should be maintained and enhanced.

B. Site Planning

1. Structures, open space, and areas of historic significance should be preserved and enhanced and an appropriate integration of new development, renovations, or additions must be ensured.

2. A system of continuous pedestrian routes throughout the campus should be established which provide safe and convenient access to all University facilities, including convenient access for the physically disabled.

3. The grouping of buildings with related use and technical support facilities should be encouraged.

4. Aesthetic aspects of public areas should be enhanced.

5. Personal safety considerations must be paramount in building and landscape design.

C. Landscaped Outdoor Open Space

1. Designated funding for landscape improvements are required to be included within the total building project budgets in accordance with the University's budget guidelines.

2. Priority should be given to landscape improvements on the St. George Campus identified in the open space master plan "Investing in the Landscape" and on the Mississauga and Scarborough Campuses identified in their respective master plans.

3. Existing University open space, gardens and treed areas of significance should be respected and enhanced when planning new development, renovations and additions to adjacent buildings.

4. Optimal microclimatic conditions should be promoted through site and building design. Specifically, design must take into account that peak use of the campus occurs in fall and winter.

5. Streetscapes should be identifiable through distinctive paving, lighting, signage, and outdoor furnishings.

D. Property and Land Use

1. The use of physical resources of all kinds should aim to promote the University's academic goals. All University lands should be regarded as resources to serve the University's overall mission.

2. No buildings or campus areas should be irrevocably assigned to or controlled by a particular division or department.

3. Capital improvements and the use of existing space should be coordinated to ensure the most effective use of all resources. The secondary ramifications of every major capital project should be identified as part of the planning for the project.

4. Building renovation and adaptation should be given equal consideration with building replacement in order to maximize use of the existing space inventory and to preserve sites for development.

5. Where possible and desirable, the University should plan multiple use facilities.

6. The periphery of the campus should be planned in a consultative fashion so as to reflect the plans of both adjacent communities and the University.

7. Faculties and departments that have close functional or disciplinary relationships should be grouped whenever possible.

8. The University should vacate leased space funded by the operating budget whenever cost effective alternatives are presented to do so.

9. Surface parking should be replaced wherever possible by parking structures.

10. The university should retain oversight of design when leasing land to a third party.

E. Considerations for Building Design

1. All buildings should be identifiable as University facilities and contribute to the quality and coherence of the campus.

2. On the perimeter of the campus, the buildings should convey the identity of the University as well as ensuring appropriate integration with the adjacent communities.

3. Each building project should be developed as part of an integrated whole, consisting of built space, open space, and functional inter-relationships.

4. The gross area of each building should be minimized to reduce capital and operating costs while fulfilling program requirements according to a system of objective space standards.

5. Building design should make efficient use of each building site taking into account the limited availability of undeveloped campus lands.

6. Building design should take into account impact on micro-climatic conditions.

7. Facilities that do not require surface locations should be built below grade when possible.

8. lnfill should be considered to capitalize on unused space or where it can preserve and reinforce the historical, aesthetic, or functional attributes of existing buildings.

9. Accessibility for the disabled must be taken into account in building design.

10. Building design should provide flexibility to facilitate changes in use and improvements in technical support facilities.

11. All building projects should take into account the principles described above in order to improve adjacent existing facilities whenever possible.

12. When making decisions about designs, processes and products that influence resource use and other environmental impact, alternative methods that result in good environmental practices should be considered.

13. All buildings are to be designed according to principles of green building in order to minimize energy and materials demand, and to minimize interior pollution.