Project Planning Report for the North Building Reconstruction, Phase A at the University of Toronto Mississauga

December 16, 2011

I Executive Summary

The North Building, built more than forty years ago, is the oldest academic structure on the University of Toronto Mississauga campus. This building was constructed in 1967, shortly after the campus was established, and was intended to be a temporary structure; it was originally scheduled for demolition after the William G. Davis Building (formerly the South Building) was opened in 1971. The building is crowded, has poor air quality and does not meet today's standards for academic and support spaces. However, with the growth in academic and research programs and student enrolments, UTM has not been in a position to remove the North Building from active service.

The most recent enrolment growth plans for the UTM campus to 2015/16 anticipate an additional 2,000 FTE undergraduate students and at least 83 FTE graduate students. Over the past decade, UTM has experienced a 77% increase in space including classrooms, laboratories, offices and residential space. In spite of this considerable new construction, UTM's physical resources have not kept pace with the increase in student population in terms of the COU space guidelines. In 2011/12, the UTM campus is at roughly 80% of the COU standards but by 2015/16, with approximately 12,000 FTE students, that percentage will drop to 68% unless additional facilities are made available

In the summer of 2008, the Provincial Government solicited capital projects from post-secondary educational (PSE) institutions. The North Campus was one of five capital projects identified by UTM as needed to enable full campus expansion. Though not funded at that time, Phase A of the project was resubmitted in 2011. This successful submission for government support described the re-construction of a 3,881 net assignable square metre (nasm) structure to accommodate the Department of Mathematics and Computational Sciences; the Department of Psychology; new and improved Drama rehearsal studios and related support space, new classrooms, expanded student amenities (such as study and lounge facilities), and food services. Since that submission, UTM has refined its approved enrolment expansion plans as noted above, plans that include expected growth for some of the principal occupants of Phase A. The proposed North Building reconstruction project includes provision for that growth.

In the 2011 UTM Campus Master Plan, the North Building Reconstruction project consists of three phases, each of which will replace and expand upon the building's existing footprint. This project, Phase A, is a 4-storey structure that will replace the south portion 'Block A' of the existing 2-storey North Building. The project will:

- provide a quality of space at the standard of other recent academic buildings on campus to consolidate academic departments currently dispersed in the William G. Davis Building and elsewhere;
- address a serious campus space shortage and provide accommodation for projected growth to 2015/16;
- as a secondary effect, vacate much needed space for science expansion in the William G. Davis Building.

As it has developed, in light of confirmed enrolment growth targets beyond that originally envisaged, the space program for the Phase A project has grown to 5,220 nasm to adequately meet the needs of the three departments through 2015/16 and to create a small pool of yet to be allocated office facilities that will help address the campus-wide shortage of office space and possibly be used to help decant some of the existing occupants from adjacent spaces to facilitate the next phase of the North Building re-development.

In addition, a total of 2,164 nasm in existing buildings will become available for other academic uses upon completion of this project, 139 nasm in the Communication, Culture & Technology Building, 334 nasm in the Academic Annex, 420 nasm in the remaining blocks of the North Building and 1,271 nasm in the Davis Building.

Future phases of the North Building Reconstruction will include additional academic space for the Humanities, student amenity space and, possibly, theatrical performance facilities. Phase A development is expected to generate interest/investment in future Phases B + C (currently not funded).

In summary, the program for the North Building Reconstruction Phase A is 5220 nasm (10,440 gsm) providing accommodation for the following:

	NASM Proposed
Math & Computational Sc (MCS)	1,295
Psychology (AWB)	1,435
Theatre and Drama	863
Unallocated Academic Offices	164
Classrooms	751
Student Study Space	216
Food Services	406
Miscellaneous	90
TOTAL	**5,220**

The existing North Building is 9,467 gsm; 3,308 gsm (existing Block A) will be demolished with the Phase A Reconstruction. In terms of useable space, 2,290 nasm will be demolished and 5,220 nasm will be reconstructed with a net addition to the campus of 2,930 nasm.

Based on the projected operating costs for the recently completed Terrence Donnelly Health Science Complex, Phase A of the North Building Reconstruction is projected to have direct operating costs of $1,251,660 per annum and indirect costs of $387,440 per annum in 2011 dollars. With the current annual pro-rated operating costs for the North Building (Block A) at $316,500 for direct and indirect costs, Phase A is thus projected to have a net increase in direct and indirect operating cost of $1,322,600 per annum. These additional operating costs have been provided for within the 5-year operating budget of UTM.

The estimated Total Project Cost for Phase A of the North Building Reconstruction project is $56 million. $35 million will be funded by the Provincial Government, $17 million in borrowing, $0.9 million from UTM's Graduate Expansion Capital Fund, and $3.1 million is to be funded by UTM from one-time capital reserves.

The few remaining occupants of Block A are to be relocated in May 2012 with demolition and site excavation beginning in May or shortly thereafter. Occupancy is August 2014.

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II Project Background

a) Membership

Paul Donoghue, CAO University of Toronto Mississauga (Co-Chair)
Gail Milgrom, Acting Assistant Vice President Campus and Facilities Planning (Co-Chair)
Sarah Hinves, Planner, Office of the AVP Campus and Facilities Planning (Secretary)
Shirley Roll, Planner, Office of the AVP Campus and Facilities Planning
Lucia Hlasna, Undergraduate student, Environmental Management, Department of Geography, UTM
Konstantin Khanin, Chair, Mathematical and Computational Sciences, UTM
Meredyth Daneman, Department of Psychology UTM (added to original membership)
Rob Eberts, Department Manager, English & Drama, Philosophy, Language Studies
Holger Syme, Chair of the Department of English and Drama, UTM
Shafique Virani, Chair of the Department of Historical Studies, UTM
Bill McFadden, Director of Hospitality & Retail Operations, UTM
Andrew Stelmacovich, Executive Director, Office of Advancement, UTM
Richard Peters, Facilities Management & Planning, UTM
Joe Lim, Chief Information Officer, UTM
Paull Goldsmith, Director, Facilities Management & Planning, UTM
William Yasui, Senior Planner, Facilities, Management & Planning, UTM
Stepanka Elias, Planner, Facilities Management & Planning
Julian Binks, Director, Planning & Estimating, Capital Projects

b) Terms of Reference

1. Make recommendations for a detailed space program and functional plan for a phased reconstruction of the North Building to accommodate academic programs. (Phase A only)
2. Demonstrate that the proposed space program is consistent with the Council of Ontario Universities' (COU) space standards and University of Toronto space standards.
3. Determine a functional layout of the space required within the proposed building envelope identified in the UTM Campus Master Plan.
4. Determine the secondary effects of the project, including any necessary space reallocation, the impact on the delivery of academic programs and activities in the building during construction.
5. Identify all equipment, moveable furnishings, data and communications requirements necessary to the project and their related costs.
6. Identify all security and occupational health and safety requirements and their related costs.
7. Determine a total project cost (TPC) estimate for the capital project, including costs associated with secondary effects.
8. Identify all sources of funding for the capital project and any increased operating costs once the project is complete.
9. Report by end of September, 2011 (revised to January, 2012).

c) Background Information

The most recent enrolment growth plans for the UTM campus to 2015/16 anticipate an additional 2,000 FTE undergraduate students and at least 83 FTE graduate students. Over the past decade, UTM has experienced a 77% increase in space including classrooms, laboratories, offices and residential space. In spite of this considerable new construction, UTM's physical resources have not kept pace with the increase in student population in terms of the COU space guidelines. In 2011/12, the UTM campus is at roughly 80% of the COU standards but by 2015/16, with approximately 12,000 FTE students, that percentage will drop to 68% unless additional facilities are built.

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The quality of space in the North Building greatly contrasts other academic buildings on campus, particularly the South (Davis) Building Phase I, which provides newly renovated academic and administrative space; and the new Terrence Donnelly Health Science Complex (HSC). In addition, the Instructional Centre (IC) provides 27 new classrooms of varying sizes and is located nearby in the North Campus.

In accordance with the 2011 UTM Campus Master Plan, the North Building Reconstruction project includes three phases, each of which will replace and expand upon the building's existing footprint. This project, Phase A, is a 4-storey structure that will replace the south portion 'Block A' of the existing 2-storey North Building. The project will:

- provide a quality of space at the standard of other recent academic buildings on campus to consolidate academic departments currently dispersed in the William G. Davis Building and elsewhere;
- address a serious campus space shortage and provide accommodation for projected growth to 2015/16;
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Future phases will include additional academic space for the Humanities, student amenity space and, possibly, theatrical performance facilities.

In the summer of 2008, the Provincial Government solicited capital projects from post-secondary educational (PSE) institutions. The North Campus was one of five capital projects identified by UTM as needed to enable full campus expansion. Though not funded at that time, it was resubmitted in 2011. This successful submission for government support described the construction of 3,881 net assignable square metre (nasm) structure to accommodate the Department of Mathematics and Computational Sciences; the Department of Psychology; the re-instatement of new and improved Drama rehearsal studios and related support space, new classrooms, expanded student amenities (such as study and lounge facilities), and re-instated food services. Since that submission, overall enrolment growth targets have been confirmed at levels higher than anticipated and resulted in a revised space program of 5,220 nasm.

A Project Planning Committee for UTM's North Building Reconstruction was struck with Membership and Terms of Reference in March, 2011.

d) Statement of Academic Plan

Strategic priorities for UTM include enriching the student experience, enhancing infrastructure, building upon academic programs, and strengthening faculty. Inherent in these priorities is a focus on teaching and research, as well as creating a student-centred research community. As part of U of T's overall strategic planning, UTM is planning further enrolment growth. Academic priorities are driven by planning at the unit and divisional levels, in a process informed by external reviews and involving widespread consultation with all interested members of the UTM community. The North Building Phase A is one of four proposed capital projects at UTM in the planning stage. Immediate needs have been identified for a number of groups on campus, compounded by a projected population growth of approximately 2000 students by 2015/16. Most of this growth will occur at the undergraduate level, but graduate growth is also planned.

The current undergraduate FTE projection for 2015/16 is 11,615 FTE (14,037 head count).

UTM Fall/Winter Student Headcount and FTE

Headcount			
	2008-09	**2011-12**	**2015-16**
Undergraduate	10,506	11,679	14,037
Graduate*	430		
Total	10,936		

FTE			
	2008-09	**2011-12**	**2015-16**
Undergraduate	8,678	9,614	11,615
Graduate*	367	446	529
Total	9,045	10,060	12,144

**Graduate counts include both students registered in UTM graduate programs and graduate students who choose formally to affiliate with UTM*

As the campus grows, it is critical that the students, staff, and faculty have the resources they need to thrive and excel in accordance with the academic mission. In keeping with the University's *Statement of Institutional Purpose* and the shared academic vision as articulated in *Towards 2030*, the university needs to ensure that faculty growth accompanies student growth in order to give the students the opportunity to interact closely with top teachers and researchers in lectures, seminars, teaching laboratories, shared research projects, and in co-curricular activities that enrich the academic experience of students and faculty alike. In order to maintain and increase student exposure to a research-intensive exploration of new ideas, novel hypotheses and methods, enhanced research space is needed that encourages interaction between researchers working on shared problems, undergraduates and graduate students in ways that facilitate innovative approaches to problem-solving.

In relocating Psychology space to the North Building, an entire research cluster working on improving human well-being will be moved into new space that will foster this collegial interaction. The additional space will also enable the hiring of more faculty in areas of high student demand and improve on the facilities used to teach students the latest methods in research.

Similarly, consolidated and improved research, teaching, and student study space for the Department of Mathematics and Computational Science will also provide student academic

societies better opportunities to orient new students into the teaching and research cultures in their chosen field of study.

Finally, arts and culture are important parts of the academic culture. In this project, the Theatre and Drama Studies program will receive well-designed rehearsal and preparation space allowing students to create the dramatic performances that are an essential part of their studies.

Psychology

The Department of Psychology's mission is to promote the understanding of animal and human behaviour, with particular focus on how individuals communicate with one another, how they adjust to their environments and circumstances (social, physical, developmental), and the underlying influences of physiology and genes on these processes. Generally, psychologists examine a range of mechanisms underlying behaviour from the molecular to the molar, from genes to culture. Different questions are addressed at different analytic levels by three research clusters: (a) Human Communication (HC); (b) Genes, Environment, Nervous System, and Behaviour (GENAB); and (c) Adjustment and Well-Being (AWB). Cutting across these three clusters is a developmental approach or theme that views these substantive areas from a dynamic, lifespan perspective.

All three research groups have a strong commitment to undergraduate teaching and all three contribute to the general Psychology programs (specialist, major, and minor) and to the special undergraduate programs (i.e., Exceptionality in Human Learning; Behaviour, Genetics, and Neurobiology; and Forensic Psychology).

The current North Building Reconstruction project will allow the relocation of Psychology's departmental offices and support spaces, its undergraduate teaching facilities, and the Adjustment and Wellbeing research cluster (academic offices and research facilities). The Human Communication cluster will remain in the Communications, Culture and Technology Building, and the Genes, Environment, Nervous System, and Behaviour cluster will remain in the William G. Davis Building.

The aim of the Adjustment and Well-Being cluster is to study the individual and social factors that enable people to lead happy and healthy lives throughout the lifespan. As human development is a life-long process, people need to constantly adapt their goals and behaviours to changes in their environments in order to maintain high levels of functioning and wellbeing. AWB's focus on social aspects of adaptation emphasizes the need for children and adults of all ages to pursue their own wellbeing in cooperation with others in a highly social world. The study of wellbeing and adaptation requires a broad range of methods from the traditional laboratory psychology experiment to longitudinal designs, cross-cultural studies, nationally representative survey data, experience sampling studies, and randomized controlled intervention studies. To analyze these complex data, AWB research utilizes a broad range of advanced statistical methods such as multi-level modelling, structural equation modelling, growth modelling, and survival analysis.

Mathematics and Computational Sciences

Mathematical and Computational Sciences is a multi-discipline department comprising three disciplines, Computer Science, Mathematics and Statistics. Due to lack of contiguous space, the Department's offices have been spread around the campus hindering the interaction within the Department and making it difficult for students to navigate and interact with faculty members.

With the Phase A Reconstruction of the North Building, the Department will, for the first time, have cohesive space where all three disciplines will have their offices nearby and have proper TA space with one room assigned for each discipline. The heavy traffic of students and TAs for Math Help and the current overcrowding will be alleviated by the provision of these separate rooms. It

will be an important improvement for the Department to have their research space, including their new Human Computer Interaction Lab, nearby. The new space will create a good working environment for postdoctoral fellows who come to UTM to teach and collaborate with their supervisors and will help to attract graduate students.

The Department will require net additional space due to anticipated increased enrolment to 2015/16 and the need to replace existing centrally allocated teaching spaces with new, specialized departmental teaching spaces in the new location. The new MCS space will greatly enhance excellence in teaching and research.

Theatre and Drama Studies

The Theatre and Drama Studies (TDS) degree is very much *sui generis*. It cannot be reasonably compared to programs such as the one at Queen's, since it offers professional training; and it cannot be easily compared to BFA programs like York's or Windsor's either, since it offers much more rigorous and demanding academic instruction. Finally, unlike all of its competitors, TDS is a shared enterprise, and many of the spaces UTM would otherwise have to provide are being supplied by Sheridan College.

Thus, there are no studio spaces at UTM – no spaces for training in acting, movement, voice, or singing, nor the associated support spaces. All UTM covers are facilities associated with the productions staged at the Erindale Studio Theatre.

What distinguishes the TDS program, beyond its unparalleled academic strength (unparalleled not just in Ontario, but in Canada), is the central place of these productions in the curriculum. All enrolled students play integral roles throughout the season as part of their degree requirements: in the first two years, in various backstage roles associated with a range of production-related courses (DRS121/2, DRS221/2); in the final two years, as actors in two productions (DRS321/2, DRS421/2). UTM provides the spaces that make these parts of the curriculum possible.

In order to accommodate all of the third- and fourth-year students, Theatre Erindale stages a season of five productions, providing between ninety and one hundred roles for the actors. In Canadian professional theatre, this number is exceeded only by the Stratford and Shaw Festivals. The schedule requires that two shows are always in rehearsal concurrently.

The shape and structure of the program is strictly an academic consideration. TDS has been a remarkable success story over the past 20 years, and there is no evidence that changes to the program would be academically wise, justified, or advisable. But from its structure flow certain obligations and needs, many of which have not been adequately met in past years. The space program in Phase A is needed to replace existing substandard rehearsal and other technical support space with new space that will better serve this purpose.

e) Space Requirements

Existing Space

North Building	gsm	nasm
All Blocks	9,467	6,346
Block A, to be demolished	3,308	2,233
Existing space to remain	6,159	4,113

Occupants of Blocks B and C to remain	nasm
Computing and Classroom Support	65
Department of English and Drama	353
Department of Language Studies	446
Department of Historical Studies	439
Department of Anthropology	34
Department of Philosophy	264
AccessAbility Resource Centre	47
Facilities Management and Planning	318
Human Resources	131
Principal's office (inactive/assignable space)	17
Registrar (classrooms)	1,325
VP Academic (study space)	112
VP Academic (office support space)	99
VP Research (office space)	14
Student Organizations	29
Space vacated by Theatre and Drama	420
	4,113

Some of the space in Block A has already been vacated and not re-assigned in preparation for demolition. Anthropology research space has been relocated to the fourth floor of the new Health Sciences Complex and rehearsal space belonging to Theatre and Drama has been temporarily relocated to the other blocks of the North Building until the new rehearsal space is built. There is a small amount of classroom space in Block A that will be taken out of service until the new space is built, as will be the case with space currently allocated to Food Services. The Departments of Anthropology, Historical Studies and Philosophy still have space in Block A that will be relocated prior to demolition.

Phase A occupants will include: the Department of Mathematics and Computational Sciences (MCS); the Department of Psychology Adjustment and Well-Being group (Psych AWB); Theatre and Drama program; classrooms; student study and lounge areas; food services and a small amount of 'unallocated' academic space to support future growth.

For planning purposes, the Department of Psychology and the Department of Mathematics and Computational Science evaluated the potential impact on their departments of anticipated growth in undergraduate student enrolments at UTM by the 2015/16 academic year. The actual effects of enrolment growth, with regard to faculty, staff and graduate student numbers, will be more accurately known when UTM's academic planning process is completed later in the current academic year; however, these two academic units are expected to experience significant growth. The space program in this report has been developed to reflect the most probable growth scenario for them.

The space required by Theatre and Drama represents a net increase in space to address a current shortfall and improvements upon their current substandard facilities, not due to any anticipated growth in the academic program.

Although space has been identified in the program to accommodate departmental growth, specific rooms or facilities will be assigned to Phase A's occupants only as proven to be required on their move in date and additional space will be released to them by UTM's Space Management and Planning Committee after the move in date based on demonstrated need. Any facilities not required by these departments on the move in date will be re-assigned, temporarily, to other departments, programs or initiatives.

Space Available for Reallocation

The table below identifies the facilities currently allocated to departments that will be replaced by facilities in the new Phase A project. With the exception of the existing food services facilities which will be demolished, all other vacated spaces will be released from departmental control for re-assignment by UTM's Space Planning and Management Committee (SPMC); these departments will not retain any access or control over these rooms unless approved by the SPMC.

Building	**nasm**
Academic Annex	334
Davis Building	1,271
CCT	138
North Building Blocks B &C	420
Available for reallocation	**2,163**

Departmental Space Determination

The space program developed for the North Building Phase A Reconstruction was based on the Council of Ontario Universities' (COU) space standards and University of Toronto space guidelines. The space generated follows standards such as one 12 nasm office per FTE faculty or two post-doctoral fellows, and 4 nasm allocated per graduate student. Detailed analysis can be found in Appendix B.

Summary of Space Program

The table below compares the existing to the proposed allocations.

	existing nasm	proposed nasm
Math & Computational Sc (MCS)	980	1,295
Psychology (AWB)	764	1,435
Theatre and Drama	420	863
Unallocated Academic Offices	0	164
Classrooms	305	751
Student Study Space	0	216
Food Services	493	406
Miscellaneous	20	90
TOTAL		**5,220**

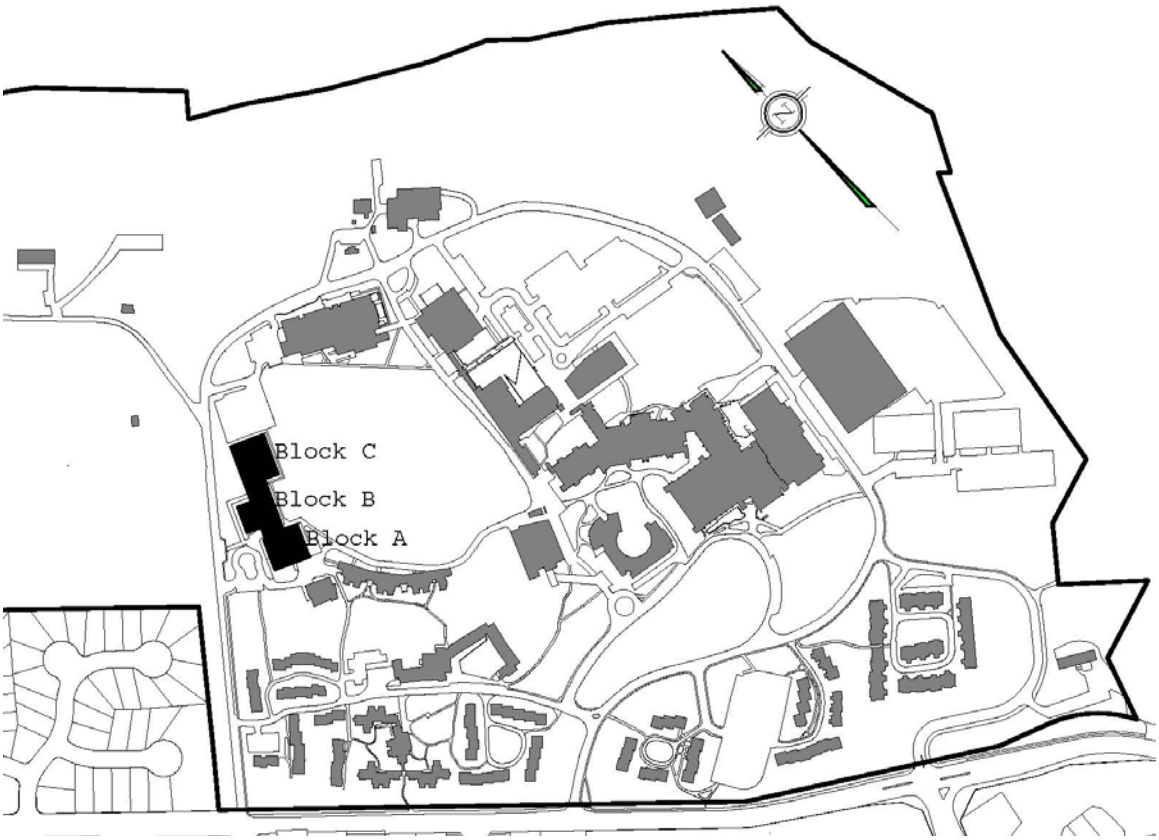
A gross up factor of 2.0 has been planned for this building to allow for an extension of the central receiving area and tie in to the Central Utility Plant (CUP) infrastructure. The gross up factor also reflects the building's significant role in offering a major thoroughfare from the Instructional Centre to the 5-minute Walk, and between the two grade levels (Outer Circle Road and the main campus). As 2,290 nasm are being demolished, this building will provide a 2,930 nasm net increase in space on the campus.

III Project Description

a) Vision Statement

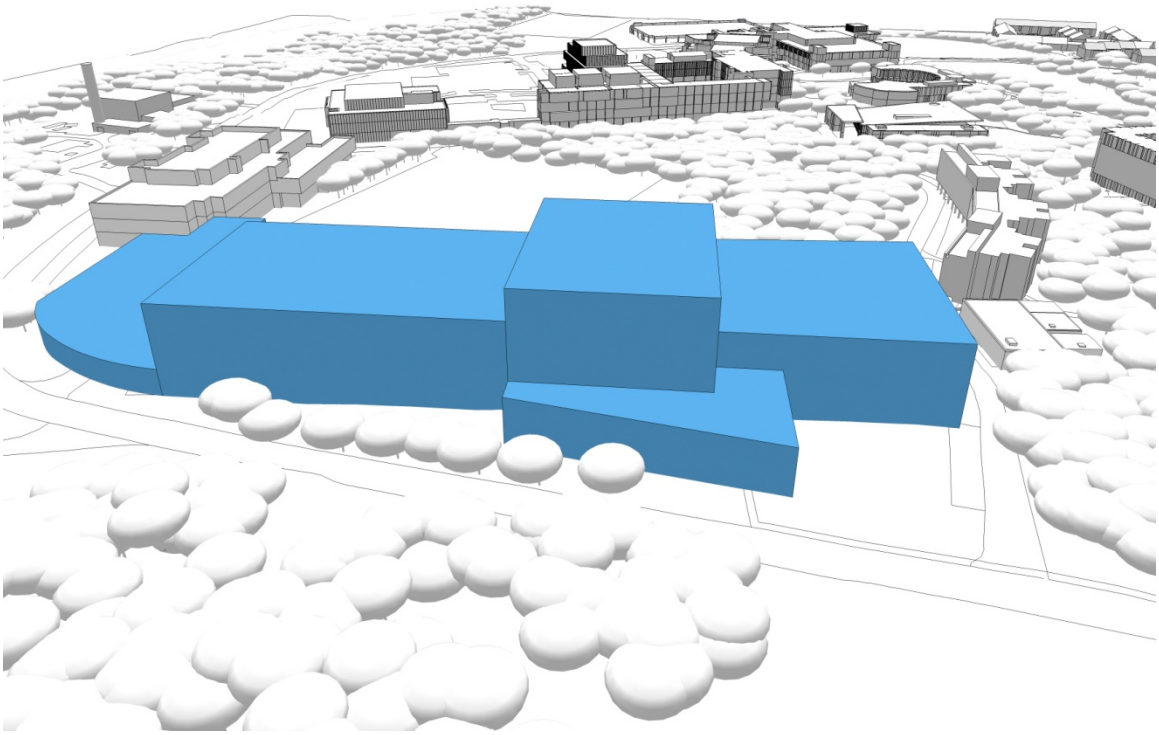
Though the campus has experienced a significant increase in its built environment over recent years with new facilities such as the Instructional Centre; the Terrance Donnelly Health Science Complex; the Hazel McCallion Academic Learning Centre; and the Communications, Culture and Technology building, many space needs remain, particularly in the Humanities and Social Sciences. Expansion is required to address the current shortfall, as well as student enrolment growth and new academic initiatives.

The North Building Reconstruction project is envisioned as a phased demolition and reconstruction of the existing North Building, Blocks 'A', 'B' and 'C'. This project focuses on Phase A, which requires demolition of Block 'A' and tie-in to Block 'B' until funding becomes available for future development. Full reconstruction of the site, either as a single building or as several linked phases, will allow UTM to consolidate current space needs in the Humanities and also to meet future requirements for more contemporary academic and student support facilities. The project is as much about addressing the shortfall as it is about growth. As demonstrated in the 2011 UTM Campus Master Plan, the existing North Building site provides sufficient capacity for a 29,000 net assignable square metre (nasm) complex, equal to the total assignable floor area in the William G. Davis Building. Full development of the site could accommodate much of UTM's projected growth within the next five to ten years.



Key Plan indicating Blocks A, B, & C of Existing North Building
Block A to be demolished to accommodate new Phase A of the redevelopment of this site

This project presents an excellent opportunity for UTM to eventually remove from its building inventory an architecturally uninspiring and very energy-inefficient building and replace it with a visually striking structure (or structures) that is technologically innovative, energy efficient, and ecologically sustainable. It will be possible to extend centrally generated utilities not only to the North Building but also to the rest of the north campus for future capital projects.



Massing Model all Phases Site 7, North Building Redevelopment, 2011 UTM Campus Master Plan
Phase A envelope on the right stepping up to 5 storeys (6 storeys from Campus Green) from the existing Erindale Hall Residence; rising to 9 storeys in Phase B with a lower entrance court envelope; and dropping back down to 6 and 2 storeys in phase C at the left, to connect with the existing Instructional Centre.

The new Phase A structure will be three storeys above grade at the Outer Circle Road (four storeys at the future Campus Green), plus the mechanical penthouse. The proposed height balances the need for space and a desire to provide a sense of arrival at the end of the Five-minute Walk with sensitivity to context, particularly the height and scale of Erindale Hall Residence. The same sensitivity should be applied to the detail, proportions and materiality of the building façade.

The building should be inspiring and inviting, with light-filled public spaces; glazing should be located to optimize views to the future Campus Green on one side, and the preserved natural area on the other. A minimum of two main building entrances should be considered from level 1 (Campus Green/Five-minute Walk) and level 2 (Outer Circle Road). The design for Phase A must consider the remaining North Building Blocks as well as the future phases of the

reconstruction plan in terms of connection of circulation spaces and the locating of the two new elevators. Though an atrium space is not anticipated in the building, part or all of the main entry spaces may be double height.

It is important that the design and layout of this space intuitively lead students, staff and faculty to their destinations. The design and layout should clearly indicate which areas are public, semi-public, private or restricted. Good layout and design will ease pedestrian flow and confusion and provide an enhanced sense of safety and security to users and occupants.

Food Services' servery and seating area need to be visually and physically accessible from the main building thoroughfare. The space should be inviting and open. Natural light and courtyard views are desirable. Food Services must be clearly delineated by volume, finish, and other design elements. The servery must be configured so that, after hours, it is easily partitioned from the seating area, which may be used 24-hours a day.

b) Space Program and Functional Plan

Department of Mathematics and Computational Sciences (MCS)

The space program for the Department of Mathematics and Computational Sciences includes all types of space required to house the entire department, replacing all of their existing space and increasing their total allocation of space to reflect the anticipated growth in their department. The total number of existing and anticipated faculty, staff and graduate students indicated below were used to generate the space program for MCS.

	2011	2015-2016	Total
FTE Faculty (Chair)	1	0	1
FTE Faculty (research)	13	6	19
FTE Faculty (teaching)	9	3	12
Total FTE Faculty	23	9	32
PDFs	10	1	11
Research Associates	0	0	0
Graduate Students	0	9	9
Administrative Staff	4	0	4

While the Department includes three major components – Mathematics, Computer Science and Statistics – that do have separate needs, these disciplines often work together and the layout of their space needs to reflect this interaction and foster collaboration amongst them.

The space program developed for the anticipated 2015/2016 profile of the Department of Mathematics and Computational Sciences (MCS) is 1295 nasm.

MCS	# rooms	nasm per	total nasm
Offices:			
Chair Office	1	18.0	18.0
Faculty Offices (private)	27	12.0	324.0
Faculty Offices (shared FTE cross stipend)	7	12.0	84.0
Research Offices (11 post-docs)	6	12.0	72.0
Graduate Student Offices(9 students)	3	12.0	36.0
Admin. Offices	3	12.0	36.0
Admin. Offices (large)	1	15.0	15.0
Office Support:			
Reception	1	9.0	9.0
Kitchenette/Staff Lounge	1	30.0	30.0
Photocopier/Mail and Supply Room	1	9.0	9.0
File Storage	1	3.0	3.0
Meeting Room (centrally booked 12-seat)	.33	35.0	11.7
Meeting Room (centrally booked 12-seat)	.33	35.0	11.7
Meeting Room (centrally booked 25-seat)	.33	50.0	16.6
Teaching:			
*Computer Teaching Lab (50 stn)	1	144.0	144.0
*Computer Teaching Lab (30 stn)	2	78.0	156.0
TA Help Room 1 (Statistics)	1	40.0	40.0
TA Help Room 2 (Math & Comp. Sci.)	2	60.0	120.0
Printer Room (shared)	1	10.0	10.0
Computer Storage	1	6.0	6.0
Research:			
Graduate Student Seminar (Computer) Rm	1	22.0	22.0
Graduate Discussion/ Seminar Room	1	66.0	66.0
Human-Computer Interaction Lab	1	55.0	55.0
Subtotal – MCS:			**1,295.0**

*Computer Teaching Laboratories are centrally scheduled by the Registrar's Office; these facilities are jointly controlled by the Registrar's Office and MCS.

Department of Psychology (Adjustment and Well-Being group)

Phase A of the North Building Reconstruction project will allow the relocation of Psychology's departmental offices and support spaces, its undergraduate teaching facilities, and the Adjustment and Well-Being (AWB) research cluster (academic offices and research facilities). The Human Communication cluster will remain in the Communications, Culture and Technology Building, and the Genes, Environment, Nervous System, and Behaviour cluster will remain in the William G. Davis Building.

The total number of existing and anticipated faculty, staff and graduate students below were used to generate the space program for Psych AWB.

	2011	**2015-2016**	**Total**
FTE Faculty (Chair)	1	0	1
FTE Faculty (research)	6	4	10
FTE Faculty (teaching)	3	0	3
Total FTE Faculty	10	4	14
PDFs	2	4	6
Research Associates	0	0	0
Graduate Students	8	22	30
Administrative Staff	4	1	5

The space program developed for the anticipated 2015/2016 profile of the Department of Psychology Adjustment and Well-Being group (Psych AWB) is 1,435 nasm.

Psych AWB	# rooms	nasm per	total nasm
Offices:			
Chair Office	1	18.0	18.0
Faculty Offices (Private)	12	12.0	144.0
Faculty Office (Computer Instructor)	1	14.0	14.0
Faculty Office (Shared, 13 FTE+ cross-app)	3	12.0	36.0
Research Offices (6 PdFs)	3	12.0	36.0
Graduate Student Offices (30 students)	6	20.0	120.0
Admin. Offices	3	12.0	36.0
Admin. Workstations	2	10.0	20.0
Office Support:			
Reception (merge w/Admin stns)	1	9.0	9.0
Kitchenette/Staff Lounge	1	30.0	30.0
Photocopier/Mail and Supply Room	1	9.0	9.0
File Storage	1	6.0	6.0
Meeting Room (centrally booked 12-seat)	.33	35.0	11.7
Meeting Room (centrally booked 12-seat)	.33	35.0	11.7
Meeting Room (centrally booked 25-seat)	.33	50.0	16.6
Teaching:			
Computer Teaching Lab (84 workstations)	1	235.0	235.0
Computer Lab Support (Shared Office)	1	16.0	16.0
TA “P.U.M.P. Room” (TA/Club Room)	1	30.0	30.0
Research:			
Waiting Area	1	30.0	30.0
Testing Room Type 1 (Std/Shared)	12	8.0	96.0
Testing Room Type 2 (Specialized)	4	9.0	36.0
Testing Room Type 3 (Specialized)	4	8.0	32.0
Testing Room Type 4 (Specialized)	1	24.0	24.0
Testing Room Type 5 (Specialized)	6	30.0	180.0
Control Room	4	6.0	24.0
Biomarker Sampling Room	1	6.0	6.0
Data Analysis Room (Small)	4	12.0	48.0
Data Analysis Room (Large)	8	20.0	160.0
Subtotal – Psychology:			**1,435.0**

Theatre and Drama Studies

Unlike MCS and Psych AWB, the Department of English and Drama does not intend to expand its Theatre and Drama Studies program, or change its structure. The proposed area increase identified in the space program reflects a current shortfall. The space program developed for Theatre and Drama Studies is 863 nasm; this figure includes the spaces that currently occupy the 420 nasm that will be returned to the University, leaving the net new space provided to address the department's shortfall at 443.2 nasm.

Theatre and Drama Studies	# rooms	nasm per	total nasm
Offices:			
Faculty Offices (Private)	4	12.0	48.0
Faculty Offices (Shared)	2	12.0	24.0
Office Support:			
Kitchenette/Staff Lounge	1	10.0	10.0
Photocopier/Mail and Supply Room	1	4.5	4.5
File Storage	1	3.0	3.0
Meeting Room (centrally booked 12-seat)	.33	35.0	11.7
Meeting Room (centrally booked 12-seat)	.33	35.0	11.7
Meeting Room (centrally booked 25-seat)	.33	50.0	16.6
Teaching and Production:			
Rehearsal Hall 'A'	1	167.2	167.2
Rehearsal Hall 'B'	1	150.5	150.5
Rehearsal Hall 'C'	1	58.0	58.0
Rehearsal Hall 'D'	1	58.0	58.0
Costume Storage	1	100.3	100.3
Wardrobe Fitting Area	2	1.9	3.7
Furniture Storage	1	33.5	33.5
Scenery Storage	1	47.0	47.0
Hand Property Storage/Workshop	1	37.9	37.9
Storage Closets (Halls 'A' & 'B')	2	7.1	14.1
Storage Closets (Halls 'C' & 'D')	2	4.5	8.9
Chair Storage (Hall 'A')	1	13.9	13.9
Custodial (slop sink & mop)	1	1.7	1.7
Program Director's Office	1	12.0	12.0
Production Directors' Office	1	12.0	12.0
Stage Managers' Office	1	15.0	15.0
Subtotal – Theatre & Drama:			**863.2**

Academic Space (Unallocated):

With every building project, UTM attempts to make provisions for academic developments that cannot be envisioned at the time of its planning. With the campus' on-going shortage of academic office space, a cluster of academic offices and associated support facilities are included in the space program to accommodate either additional growth in the academic departments to be accommodated in Phase A or new academic initiatives.

The space program allocates 164 nasm for Unallocated Academic Space.

Unallocated Academic Space:	# rooms	nasm per	total nasm
Offices:			
Faculty Offices	8	12.0	96.0
Faculty Offices (shared)	2	12.0	24.0
Office Support:			
Kitchenette/Staff Lounge	1	17.0	17.0
Photocopier/Mail and Supply Room	1	9.0	9.0
Centrally booked Meeting Room (8-seat)	1	18.0	18.0
Subtotal – Unallocated Space:			**164.0**

Classrooms:

Currently, three classrooms are located within the portion of the North Building that will be demolished. Scheduled classroom hours of these three classrooms are being met in the new Instructional Centre. However, a number of classrooms will be lost when Phase B of the North Building Reconstruction project is ready to proceed. The space program for Phase A includes six classrooms to partially offset the future loss of ten rooms in Phase B; a further three classrooms can likely be relocated into Block C after the Theatre and Drama Studies program has been relocated to the new Phase A space. One classroom currently in Block B will either be eliminated or replaced elsewhere on campus. The proposed classrooms are to be furnished and equipped to the same level as those developed for the new Instructional Centre and will be under the scheduling control of the Registrar's Office.

The space program allocates 751 nasm for Classrooms.

Classrooms:	# rooms	nasm per	total nasm
Tiered Lecture Room (100-seat)	1	200.0	200.0
Classroom (50-seat)	4	115.0	460.0
Seminar Room (40-seat)	1	79.0	79.0
Classroom Support	2	6.0	12.0
Subtotal – Classrooms:			**751.0**

Student Study Space:

As with academic offices, UTM has a chronic shortage of spaces for students to study or socialize. An opportunity is created with each new building project to address this space deficiency and it has become policy for UTM to take advantage of such opportunities.

Thus, Phase A of the North Building Reconstruction project will include a range of student study spaces comparable to those found in the new Instructional Centre, namely, general study or lounge area, computer study room (with traditional personal computer workstations), quiet study area (wireless), and small group study rooms.

The space program provides 216 nasm for Study Space.

Study Space:	# rooms	nasm per	total nasm
General Study/Lounge (24-seat)	1	48.0	48.0
Computer Study Rm (24-seat)	1	60.0	60.0

Quiet Study Area (24-seat)	1	60.0	60.0
Small Group Study Rm (6-Seat)	4	12.0	48.0
Subtotal – Study Space:			**216.0**

Food Services – Café and Lounge

Demolition of North Building 'Block A' will remove the 490 nasm 162-seat Cafeteria from service. It is critical to replace this capacity to ensure that the campus is properly serviced from a food service perspective. The new Phase A plan provides a 406 nasm,173-seat facility that will be efficiently designed from a food service perspective and collaboratively designed from a dining, meeting and study perspective.

The North Building is designated as a "cornerstone" location in the campus master plan for food service. Specifically, this outlet will feature an expanded level of service and create a destination in the North Campus for community members to dine. Further, the intention is to design a space that will provide opportunities for people to interact, collaborate and relax. This facility will be much more than a cafeteria.

Finally, it is anticipated that the placement of the Café and Lounge concept on the ground floor of the re-developed North Building will ease the burden of other over-capacity lounge areas on campus; specifically the Davis Building Meeting Place, the HMALC and the new Instructional Centre.

This investment in Student/Food Service space will yield an immediate, measurable and positive improvement to the quality of life on campus.

The space program provides 406 nasm of Food Service facilities.

Food Services:	# areas	nasm per	total nasm
Open Seating Area:			
Cafeteria Seating *(99 seats)*	0.5	240.0	120.0
Mixed Seating *(35 seats)*	0.2	240.0	48.0
Lounge Seating *(39 seats)*	0.3	240.0	72.0
Servery:			
Public Side	1	50.5	50.5
Service Side	1	26.8	26.8
Other:			
Preparation Area	1	28.0	28.0
Warewashing Area	1	11.3	11.3
Dry Storage	1	28.0	28.0
Refrigerated Storage	1	7.5	7.5
Frozen Storage	1	7.5	7.5
Vending Machines	1	6.0	6.0
Subtotal – Food Services:			**405.6**

The proposed servery area is intended to feature a cohesive arrangement of the following services: a nationally branded coffee concept, a grab and go concept and a deli featuring freshly prepared and grilled sandwiches.

A significant component of the food services cluster is the accommodation of a dining area with a variety of seating types; a 240 nasm area allocated to lounge seating, tables and chairs will create a destination on campus. More than a place to dine; this space offers informal "hang out" space for study and socializing. This area should be located appropriately to serve the high volume of foot traffic moving through the building. The design of this space should be open, inviting and engaging. This investment in Student/Food Service space will yield an immediate, measurable and positive improvement to the quality of life on campus.

UTM will work directly with a food service facility planner and an interior design firm. Together, they will liaise with the architect on the overall design of the food service spaces in the building providing sufficient detail to ensure proper connections and rough-ins by the contractor. UTM's Hospitality and Retail Services Department will work with vendors to finish and equip the space.

Refer to Appendices for *Food Services Concept Overview and Vision.*

Miscellaneous Facilities:

Miscellaneous Facilities:	# rooms	nasm per	total nasm
Custodial Change/Lunch Rooms	1	25.0	25.0
Shipping/Receiving Area	1	18.0	18.0
Waste Management Area	1	18.0	18.0
General Storage Facility	1	29.0	29.0
Subtotal – Miscellaneous:			**90.0**

In the demolition of the portion of the North Building that is needed for the development of Phase A, the building's existing waste management and shipping/receiving area will be lost, and the existing custodial lunch room will be lost or not accessible. Phase A's space program will not only duplicate these lost facilities but will expand them and add a small storage area. A more substantial building operations support facility will need to be developed in a later phase of the North Building Reconstruction.

Non-assignable Areas

Non-assignable areas include, but are not limited to, circulation and service spaces. These aspects of the building program will be accommodated within the 2:1 gross to nasm factor.

Beyond the spaces that are described in room data sheets, UTM's Facilities Management & Planning assume that the following non-assignable areas will need to be accommodated in Phase A of the North Building Reconstruction project.

Ground Floor:

1. Building entry facility (BEF) for heating & cooling supplies, domestic water & gas (propane); as well, this mechanical room will accommodate the equipment associated with the gray water system, fire suppression system, compressors & booster pumps (if required), and meters.
2. Building entry facility (BEF) for line voltage & emergency/back up electrical power; this main electrical room will accommodate the main electrical panel, meter & emergency power switchgear.
3. Building entry facility (BEF) for telecommunications to accommodate voice/phone, existing (re-routed) fiber optic data line & new (back-up) fiber optic data line.
4. Next to the telecommunications BEF a re-located data Disaster Recovery Centre (DRC).

Each Assignable Floor:

1. Elevators – two traction elevators with one large enough to accommodate systems furniture, furniture, equipment, etc. Note: the larger elevator must serve the mechanical penthouse. These elevators can be located beside each other.
2. Stairs – number and location will depend on exiting requirements; one set of stairs will need to extend to the mechanical penthouse.
3. Electrical room with power distribution panel for the floor. Note: The food service area will likely require it's own electrical sub-panel and the same may be true for the computer teaching laboratories (but these will likely be located within or near the rooms as opposed to separate closets). These rooms will be stacked on top of each other.
4. Telecommunications closet with boards (for voice) and racks (for data) in each; suitably located for proper coverage on each floor. These rooms will be stacked on top of each other.
5. Custodial closet with the two 'ground' floors be slightly larger to accommodate more equipment (e.g. floor scrubber) & cleaning supplies due to greater amount of pedestrian traffic. Upper floors will have standard closets. These rooms will be stacked on top of each other & likely next to, or close to, washrooms.
6. Washrooms (male & female) with the two 'ground' floors having more fixtures due to higher occupancies. These rooms will be stacked on top of each other.

Mechanical Penthouse:

1. Primary function of this area is to accommodate the building's air handling equipment but will likely accommodate other mechanical equipment; such as, a workstation for the Building Automation System (BAS).
2. Elevator machine rooms

As the Phase A project is located at the terminus of a major campus pedestrian walkway called the *Five Minute Walk,* adequate entrance and circulation facilities will need to be provided to accommodate the students, faculty and staff entering the North Building at this location. The North Building currently also has a formal entrance on its second floor level that is accessible off of the Outer Circle Road. Phase A will present an opportunity to enhance or replace this entrance with a more architecturally significant statement.

Not only is the first floor of the Phase A project a major entry point for the building but it is also the best location for the food services cluster and the Theatre and Drama Studies facilities. These areas will also require that the circulation space on this floor readily accommodate the flow of people and materials. As well, the second floor will accommodate most of the undergraduate teaching facilities; these rooms and the corridors leading to them will need to be arranged and dimensioned to ensure suitable crush space for easy movement of students in and out of rooms, and past them, especially during class changes.

Note: A detailed space program reconciliation must be prepared by the design consultants at the end of Schematic Design, Design Development and prior to completion of working drawings.

Functional Plan

Several factors begin to shape the layout and massing of Phase A:

- efficiency of stacking and massing
- critical adjacencies to, and separation from, other program areas
- desire for natural light
- appropriately scaled ceiling heights and volumes
- direct access to the exterior, at grade levels
- clustering of space according to hours of operation
- need for security

Room Data Sheets have been prepared in which specific functional requirements, including the factors listed above, have been identified on a room-by-room basis.

The 2011 master plan for the campus identified a large development site (Site 7), which calls for staged demolition of the existing North Building. Phase A development will replace the existing south portion or 'Block A' of the North Building. The proposed maximum building envelope in this location is 25 m high (from the future Campus Green elevation) with a maximum footprint of approximately 2,700 gsm.

There is a one-storey grade change between the Five-minute Walk and vehicular drop-off at Outer Circle Road; this results in a partial basement condition at level 1. The Receiving Area will likely be located at level 1, along with a main public corridor that would transition with an appropriately sized feature stair between the two grade levels: level 1 and level 2. More active 'public' spaces such as classrooms, teaching labs, study space and food services would be appropriately located on the lower two floors. With high-ceiling requirements as well as potentially more significant floor loads, Theatre and Drama spaces would also be ideally suited to the lowest floor level. Public spaces such as food services should open directly to the exterior.

Academic Office space will be located on the upper floor levels, consolidated by department. It is proposed that the Department of Mathematics and Computational Studies be located on the third floor as its faculty, instructors and support staff will have significant relationship with the undergraduate teaching laboratories on the floor below. The Department of Psychology is recommended for the uppermost floor as its research activities have a need for privacy both visually and acoustically.

The new receiving area will be located at the same approximate location as the existing. General storage should be located adjacent. Food Services should also be located on the main floor (level 1) at the intersection of the new building and the remaining blocks of the existing North Building (to be expanded in future phases). The space must be carefully planned so that food line-ups do not obstruct high-traffic areas or access to other spaces. The servery should ideally be situated within the building so that the back of house area is adjacent to an elevator connection and service corridor to the receiving and waste staging areas, while simultaneously fronting the concourse or main seating areas. Dry and refrigerated/frozen storage need to be located immediately within the servery/café. Food products will be finished in a preparation area adjacent to the servery.

In order to arrive at a realistic budget and to demonstrate the fit of the program to the approved envelope while preserving the required functional relationships of the program elements, the following vertical arrangement of the assignable space, or a 'functional plan', was prepared:

Program Space	Floor level	Nasm
Theatre & Drama Studies (Dept. of English & Drama)	1	823
Food Services	1	406
Computer Study Room	1	60
Miscellaneous Service Areas	1	90
Sub-total level 1		1,379
Shared Departmental Meeting Space	2	35
Math & Computational Science Teaching Labs & Support space	2	476
Psychology Computer Instructor office	2	14
Psychology Teaching Labs & Support spaces	2	281
Centrally Allocated 50- & 100-seat Classrooms & Classroom Support	2	436
Student Study space	2	156
Sub-total level 2		1,398
Shared Departmental Meeting Space	3	50
Math & Computational Science Offices & Departmental Support space	3	636
Math & Computational Science Research Labs and Support space	3	143
Unallocated Academic space	3	164
Centrally Allocated 50-seat Classrooms & Classroom Support space	3	236
Sub-total level 3		1,229
Shared Departmental Meeting Space	4	35
Psychology Offices and Departmental Support space	4	464
Psychology Research Labs and Support space	4	636
Centrally Allocated 40-seat Seminar Room	4	79
Sub-total level 4		1,214
Total Nasm Program Space		**5,220**

Based on the above program distribution, the budget was prepared based on the following floor to floor heights:

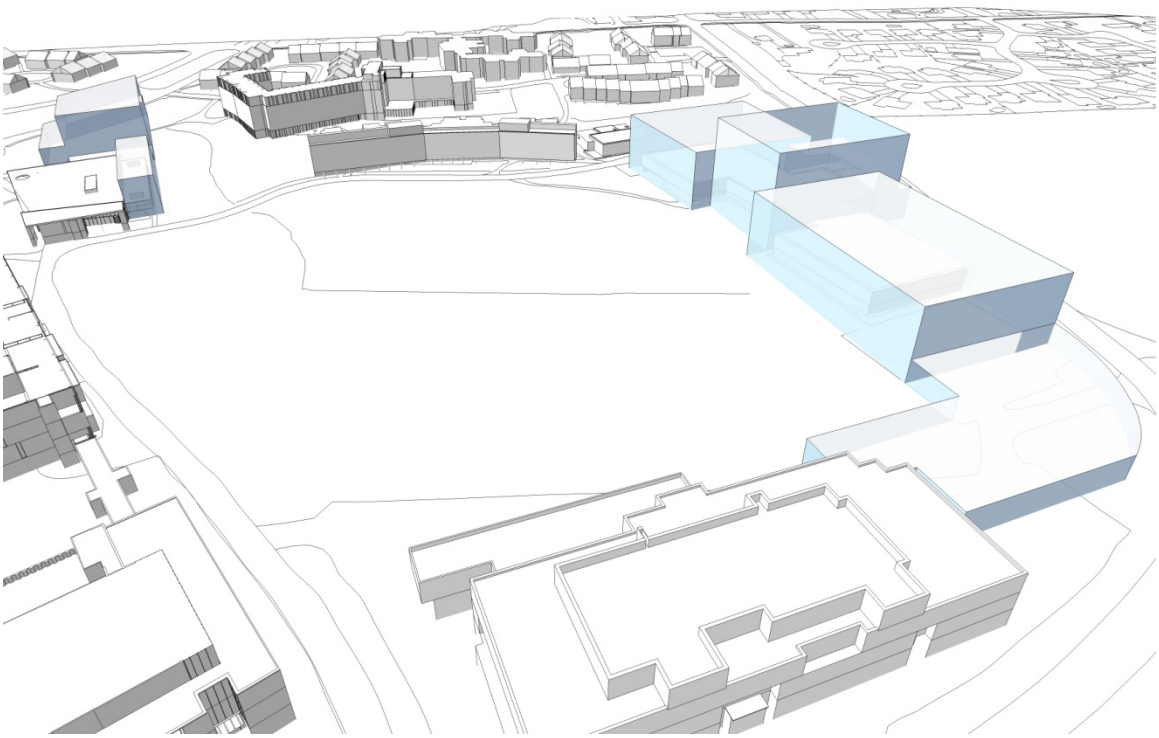
First Floor	4.90m (16’0”)
Second Floor	4.50m (14’9”)
Third & Fourth Floors	3.90m (12’9”)

The second floor elevation should be set to correspond with the appropriate elevation for access from Outer Circle Road.

c) Building Considerations

North Building Reconstruction is planned on a prominent site, visible from Outer Circle Road and from rest of the north campus precinct; Phase A is the first of several phases of expansion to replace the existing North Building on site 7, the final site to complete the enclosure of the north Campus Green. As such, it needs to take its cues from the 2011 UTM Campus Master Plan (see following section II d) Site Considerations) and other recently constructed buildings around the Green in terms of public amenity, overlook, access, scale, proportions and materiality.

This project presents particular challenges as it is the first phase of work that will replace one part (Block A) of an existing building with a much larger structure. While the massing of the future phases is proposed in the Campus Master Plan, the program and timeline for construction of these future phases are currently unknown. The new building will need to continue to be functional with the remaining blocks of the existing North Building while anticipating the much larger replacement facilities as the future phases are built.



View of Site 7 building envelopes seen from the Campus Green, taken from 2011 UTM Master Plan
The 3D massing model identifies a maximum building envelope, or 'build-to lines' in 3 dimensions for full development of this site. The site capacity allows for future Phase B 9-storey central tower, which visually anchors the proposed Phase A volume, and large volume spaces in Phase C such as theatres, classrooms, assembly space. The existing North Building is shown through the building envelopes.

The separation line between new construction (Phase A) and existing Block B must be carefully selected to ensure that the independent HVAC system for Block B is not compromised. This separation line is also critical structurally as ideally the remaining portion of Block B must be structurally sound with only minimal remediation work (i.e. respect the existing structural bays). The design must minimize the impact on the existing net assignable area in Block B as UTM does not have any spare space available for re-assignment without seriously jeopardizing current and future academic activities.

As with all recent projects on campus, new construction and renovation will follow a rigorous set of university design standards, including environmentally sustainable measures. The North Building Reconstruction will be designed and constructed to meet LEED NC Silver certification. See section on “Sustainability design and energy conservation (LEED)” that follows for further detail.

The new building must be built to, or exceed, the University’s Design Standards and the work of Phase A must continue to provide for the servicing needs of the remaining part of the North Building throughout construction while anticipating how the full build out of the reconstruction project will be achieved.

Building characteristics and massing

The scale, proportions and materiality of the North Building no longer fit the context of a campus that has matured substantially over the last decade. The current low-slung 2-storey structure lacks a sense of arrival or destination from both the Five-minute Walk approach and from the main Outer Circle Road. The entire proposed North Building Reconstruction presents an opportunity to anchor this end of campus.

The building should be high quality, functional and durable, designed to accommodate a high volume of foot traffic. For example, terrazzo flooring could be considered in high traffic areas. Local materials should be used, where possible, for both interior and exterior components and spaces.

Accessibility

The University of Toronto is committed to ensuring that its buildings and services are accessible to persons with disabilities and requires all consultants to adhere to the University’s Barrier Free Design Standards.

http://www.fs.utoronto.ca/aboutus/design/part1.htm

It is the intention of the University that, in all new construction, these standards be implemented in full, that all requirements indicated as ‘should be met’ will be understood as ‘shall be met’. While this is also the University’s intention for renovations to existing buildings, where a requirement indicated as ‘should be met’ is impossible to meet (given the constraints of the existing conditions); comparable alternative arrangements are to be explored.

In addition, the proposed AODA *Built Environment Standard* was issued in July 2010. Once legislated, it will apply to new projects, retrofits, common space and circulation areas, and change in use. AODA must be met in conjunction with the *Ontario Building Code*. Section by section the more stringent of the two requirements will prevail.

A Universal Design Consultant and a representative from the AccessAbility Resource Centre are to be included early in the design process to incorporate the consultant’s recommendations into the built project.

Phase A will be fully accessible tying into already present barrier free entrances, elevators, and sufficiently wide corridors in the remaining blocks of the existing North Building.

To address the broad diversity of people who will use high-traffic public areas, the interior layout, materials and signage system must be designed with accessible way-finding in mind (e.g. Braille, high contrast).

Personal safety and security

The building design must allow its students, faculty, staff and visitors access as required and as allowed, safely and easily. At the same time, the design must be sensitive to the needs of those whose activities require security after hours. Limited areas of this building will be operational throughout the week, 24 hours a day.

A detailed security plan will need to be developed for each room, zone or floor, and factored into the design of the building to ensure that accessibility, security and functional objectives are all met simultaneously. Specific security requirements have been identified by Phase A occupants in the room data sheets that have been prepared to describe their individual rooms (Appendix 3).

Building Access Systems

Currently, most of UTM's older buildings have exterior doors that are manually unlocked (either standard lock sets or panic bars) by custodial staff in the mornings and locked down at nights by Campus Police. As well, interior facilities that are accessed by students, faculty and staff on a regular basis such as, classrooms, study rooms, lounges, etc., are also unlocked and locked the same as for the building's exterior doors. UTM is currently undergoing a transition to a new hard key system that provides greater control of security to academic and administrative units over their own space. The new Medeco system has been included in recently completed renovations and new buildings and will be included as part of the Phase A project.

Recently, new buildings have installed electronically controlled exterior doors that can be operated either through a soft key (card), locally programmed or network driven system. Individual rooms (e.g. research laboratory, classrooms or student study areas) can also be unlocked or secured with similar systems. The particular system or mix of systems will need to be developed in conjunction with Campus Police, Facilities Management & Planning, the building occupants and other campus agencies. A significant consideration will be that the selected system(s) be able to work with the existing systems in the rest of the North Building.

Card readers may be requested by academic departments for controlled access after normal hours of operation. Universal access will be granted on the two lowermost floors' main circulation areas in line with campus' academic requirements (for example; the Hazel McCallion Academic Learning Centre and student study spaces are open 24 hours a day, seven days a week prior to and during examinations). Any electronic security system will need to have hard key override for use by police, emergency, maintenance and custodial staff.

Non-public areas, for example, mechanical/electrical areas, custodial rooms and telecommunication closets, will require standard lock sets: Hard keys will conform to approved Medeco standards.

Food Services' servery areas will need to be secured when not in use with either a retractable security screen or built-in screen or roll-down shutter.

CCTV Systems

UTM currently has closed circuit security cameras (CCTV) in critical areas of the campus. Wherever there are issues of personal safety or the security of specific equipment (for example, research laboratories, computer laboratories), cameras are strategically located to provide suitable coverage; these cameras are connected to Campus Police's monitors and recording servers in the William G. Davis Building.

The number of cameras that will be needed in this project will depend on design and layout of the Phase A program. For planning purposes, the total project cost (TPC) estimate includes an adjusted allowance based on the actual cost of the same system in the recently completed Terrence Donnelly Health Science Complex.

UTM currently has emergency call stations located throughout its buildings and campus grounds; these stations are located in either high risk areas or convenient locations (for example, readily visible in pedestrian travel routes). As with all recently completed buildings on campus, public address (PA) systems for emergency communication and notification have been included in the budget. The PA system will cover the main hallways and any high occupancy locations (for example, the dining hall, lecture hall, etc.).

Sustainable Design and Energy Conservation (LEED)

The University of Toronto has a long commitment to environmental sustainability across the academic and administrative operations of this institution. The University has been guided by an Environmental Protection Policy since 1994. This policy outlines the University's commitment to minimizing negative impacts on the environment, conservation and wise use of natural resources, and including environmental concerns in planning. The policy also commits the University to meeting and where possible, exceeding, environmental standards, regulations, and guidelines.

U of T Mississauga's banner for growth - *Grow Smart, Grow Green* - balances campus development with environmental sensitivity and responsibility. With the recent establishment of the tri-campus Sustainability Board and its sub-committees reviewing energy, capital projects and funding models for sustainable initiatives, the University of Toronto continues to make strides in the area of sustainability.

The most intriguing of new buildings on the campus are held to a rigorous set of university design standards, including environmentally sustainable measures. This project will follow the lead of recent projects at UTM: the Hazel McCallion Library (HMALC) achieved LEED® Silver in 2007; the Instructional Centre and the Terrence Donnelly Health Science Complex, both completed in 2011, were designed to achieve LEED® Silver, as was the Davis Building 3rd floor renovation.

Further, the City of Mississauga now requires LEED® Silver certification for new buildings as part of their Green Development Standards.

The North Building Reconstruction will be designed and constructed to meet LEED® NC certification at a Silver rating, or better. Some of the sustainable design strategies being considered are:

- Green roof and/or water cistern installation
- Gray water systems for flushing toilets and urinals, and for landscape watering systems
- Low maintenance native plantings
- Water-efficient fixtures and combined water fountains/bottle-filling stations
- Durable, local materials with renewable and/or recycled content
- Open lab concept to accommodate a variety of research types
- Energy efficient equipment and fixtures
- Energy efficient lighting and controls, coordinated with natural light where appropriate
- Zoned HVAC control wherever beneficial and desirable
- Optimal energy efficiency for reduced operating cost and emissions
- 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
- Roof areas suited to the incorporation of solar thermal water collectors and photovoltaic collectors if economical opportunities for such installations become available.

d) Site Considerations

Campus Planning

Campus planning at UTM has evolved with enrolment growth and has been guided by key principles established in the Campus Master Plan of 2000. Seven major buildings have been added to the inventory at UTM since 2000, their siting and massing following the planning principles set out in that document. The 2011 Campus Master Plan builds on the 2000 Master Plan taking into account the growth as it has actually transpired since the earlier plan was published.

The earlier master planning document did not anticipate re-development of the North Building site but had imagined athletic facilities and a theatre in the location of the newly constructed Instructional Centre northeast of the North Building. The anticipated athletics facility became the Recreation, Athletics and Wellness Centre (RAWC) that now adjoins the William G. Davis Building. The recent construction of the Instructional Centre between the new Hazel McCallion Academic Learning Centre and the North Building has provided the lecture hall facilities that were earlier thought might be a shared use of a new theatre. A new theatre has yet to be built. For the immediate future, Theatre and Drama will continue to use the Erindale Studio Theatre, adjacent to Phase A of the North Building development site, as their main performance space – this will work well for the department as their relocated departmental facilities form a part of this first phase of the North Building re-development.

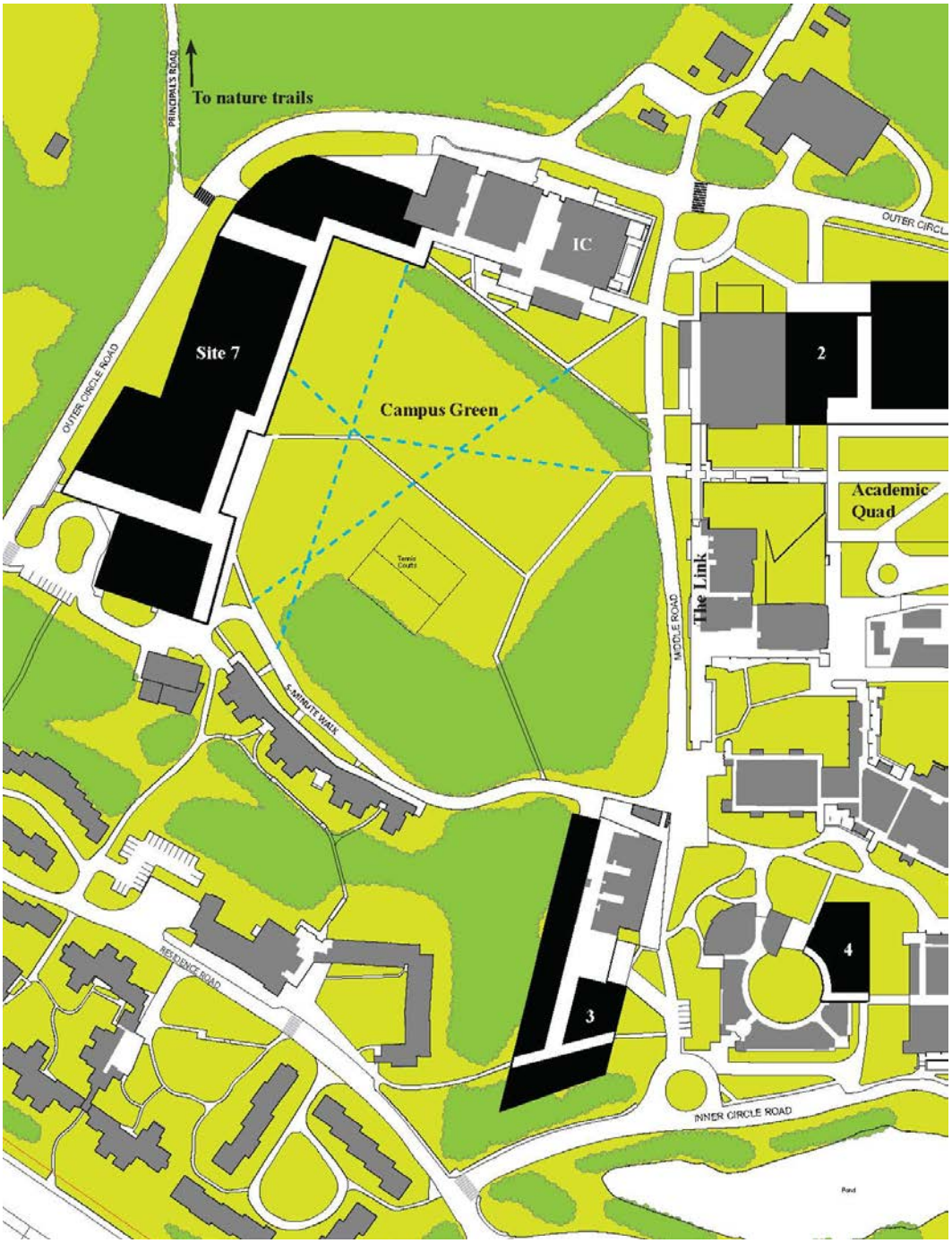
Consistent with the 2000 Master Plan, the current master plan anticipates the development of a Campus Green in the place of the current north athletic field, the edges of which are defined by a ring of buildings including the North Building, the location of which has become Site 7 in the new plan. Site 7 is considerably larger than the existing footprint of the North Building to better complete the edge of the Green and permit connection to the new Instructional Centre. The entire site comprises five blocks that can be built in phases, and includes the area currently occupied by two surface parking lots. Phase A of this project involves only the extreme southern portion of the site corresponding roughly to Block A of the existing North Building.

The proposed North Building Reconstruction on Site 7 (either a single structure or several linked phases) will be visible from Outer Circle Road and from the anticipated Campus Green and will continue to serve the campus at large as a significant campus entry point. The current architecture lacks a sense of arrival or destination from both the Five-minute Walk approach and Outer Circle Road. While the entire site will be designed and built in phases, the first phase must consider pedestrian access and the servicing of the entire build-out of the site, consistent with the aims of the approved 2011 Campus Master Plan. As per the following “Nolli” plan, full development of the site will complete the pedestrian link between the new Instructional Centre and the existing Five-minute Walk; the pedestrian link will be a continuation of the Five-minute Walk, looking onto the Campus Green and similar in character to the new IC main thoroughfare and the CCT ‘Link’.

As the first phase of a multi-phased demolition and expansion project, the building design must consider short- and long-term conditions. Phase A must tie into the existing ‘B’ and ‘C’ Blocks of the North Building at both levels, which will require planning around the existing main corridors and egress system, and matching, or transitioning to existing floor-to-floor heights. Phase A will also involve re-instating elements of the North Building Block A that are to be demolished, such as shipping and receiving, vertical access and food facilities in a manner that will anticipate and be able to support the future phases of development on this site as well as the remaining existing building.

The volume and height of a new building or series of buildings, 36 m or nine storeys at its highest, will exert a considerable presence on the campus and can add immensely to the rich and diverse architectural mix of the University and the City of Mississauga.

Phase A expansion will occupy four floor levels above the ground elevation at the Five-Minute Walk terminus. This proposal fits within the 25 m height of the site envelope identified in the Master Plan. With the relocation of several academic departments, this portion of the existing building can be effectively vacated and demolished to undertake this first phase of reconstruction.



North Campus Sector "Nolli" plan from 2011 Master Plan – Site 7 indicating all phases of the North Building redevelopment/expansion

Nolli Plan shows all means of pedestrian passage: streets, laneways, pedestrian pathways and interior 'streets' indicating the fine grain at which the pedestrian experiences the UTM campus.

Site Access

Currently, the site is easily accessible for both vehicles and pedestrians. Vehicles can access the existing North Building drop-off loop, handicap and visitor parking spots, the receiving/loading areas for the North Building, Erindale Studio Theatre and Erindale Hall, and the Five Minute Walk from Outer Circle Road.

During construction, the project team will need to work with UTM staff to minimize the effects of any road access shutdowns, especially to Erindale Hall, Erindale Studio Theatre and the Five Minute Walk. Sufficient notification of any planned closures will need to be communicated well enough in advance to ensure reasonable accommodation of campus services.

The design of Phase A and its surrounding site will need to retain vehicular access to the North Building, the Erindale Studio Theatre, Erindale Hall, the Five Minute Walk, and parking spots. Two accessible vehicle parking spots are currently available and these will not only need to be replaced but additional spots will also be required to accommodate the increase in occupancy and floor area of the North Building. There are presently seven visitor parking spots that need to be replaced; ideally, these should also be increased in number.

It should be noted that the City Of Mississauga has a bylaw that does not permit the use of the central and north entrances off Mississauga Road for commercial or heavy vehicles, and does not permit these vehicles to travel northbound on Mississauga Road. This restriction will need to be carefully monitored and policed by campus and project personnel during construction.

Landscape and Open Space requirements

Hard and soft landscaping to be included in the design, with accommodation for benches, bicycle parking, in line with the new standard palette of street furniture and materials.

Zoning Regulations

The campus is identified by the Mississauga Zoning By-law 0225-2007 as Institutional; "I" refers to Hospital and University/College that serve a regional function, in appropriate locations throughout the City; and "I-5" specifically to UTM campus. Further detail is provided under Part 12 of the By-law. The specified site is well within minimum setbacks and other regulation lines on campus.

Soil Conditions

High water tables have been found in nearby locations during the recent construction of buildings (e.g., the Instructional Centre) or other construction activities. It is likely that dewatering of the site will be required to control ground-source or run-off water. This site is at a relatively high point on the campus.

Environmental Issues

The building site does not fall within environmentally regulated areas such as Area of Natural and Scientific Interest (ANSI) or Environmentally Significant Areas (ESA), verified by the Credit Valley Conservation Authority (CVC) Regulated Features map. The only concern will be to ensure the

insulation or amelioration of sound sources from the building such as air handling equipment in the mechanical penthouse.

e) Campus Infrastruce Considerations

Utilities (electrical, water, gas, steam lines)

Currently, the North Building is not connected to the campus' central infrastructure and is the least energy efficient building on campus. The phased reconstruction program will allow the North Building to eventually replace these dated building systems with more effective and efficient ones that are served from the campus' central utilities.

In simple terms, each block of the North Building has its own heating and cooling system with a single service for electrical power, domestic water and sanitary sewage. Phase A presents an opportunity to replace the inefficient HVAC system in Block A with state-of-the-art building systems supported by new central services from the Central Utilities Plant (CUP). Future work in the remaining two blocks may consider the extension of these new utilities and systems even before subsequent reconstruction phases are implemented.

An engineering study is currently underway to investigate the most efficient and cost effective method to bring heating and cooling infrastructure to not only the North Building but also the North Campus precinct. At this time, it is likely that the North Building may present an opportunity to initiate a district heating and cooling network that originates from the Central Utilities Plant.

Domestic water and gas will continue to be supplied from the CUP. However, these services will need to be sized and improved to meet the demands of Phase A, future North Building phases, and the surrounding campus precinct. These services will likely be considered in conjunction with the routing of the heating and cooling infrastructure. For planning purposes, it should be assumed that this project will need to carry an allowance to accommodate its share of any utilities upgrades.

Currently, the North Building is served by an electrical transformer located in the lawn in front of the building. Prior to the start of demolition, new transformer(s) will be supplied and installed to the west of the current location and on the opposite side of Outer Circle Road.

Detailed cost estimates for new building infrastructure were not available at the time of this report's submission but a budget allowance has been included in the total project cost (TPC) estimate. If this allowance proves to be insufficient then UTM will investigate other sources of funding.

Sewer and Storm Water Management

The North Building has an aging and undersized sanitary sewage line that serves not only the North Building but also the Erindale Studio Theatre. This sanitary line is located under the Five Minute Walk and will need to be replaced with a new line that can accommodate the full build-out of this development site as well as any adjacent facilities (such as, the Erindale Studio Theatre). The best route for this replacement will be the same as the existing line; associated work will need to be carefully scheduled to minimize disruption and temporary measures may also be required (for example, holding tanks and pumps). This new sanitary sewer will terminate at a recently completed trunk line (approximately half way down the Five Minute Walk) that was installed and designed to divert sewage from the William G. Davis Building.

Some consideration was given to routing the line along Outer Circle Road towards Mississauga Road North. However, this route would either require a significant amount of waste to be pumped

up to the sanitary line because a sizeable portion of Phase A and Blocks B and C are below the elevation of Outer Circle Road, or be buried too deep to have the necessary slope towards Mississauga Road. As well, this new line would have to enter a city-owned sewer.

With the construction of a storm water management pond, and upgrades to the storm system completed in 2008, UTM has built-in capacity for all future buildings on campus.

Data and Voice Communications

A fibre optic service enters the North Building at Block B. Although this service will not be directly affected by Phase A construction, this existing service will be re-routed to a new building entry facility (BEF) in Phase A and all remaining North Building telecommunication services distributed from there. The BEF relocation is needed to provide optimal service to Phase A and to be prepared for the eventual replacement of Blocks B and C. The current North Building BEF serves as the building's service entry point and also as the main entry point for the UTM Campus. The proposed new BEF will continue to serve both of these requirements.

Phase A will include construction of the above new BEF, an adjacent Disaster Recovery Centre (DRC) and stacked telecommunications closets. UTM's Computing Services recommends that a second, independently-routed fibre optic service be brought in as back-up. It should be noted that the Erindale Studio Theatre is currently serviced from the North Building and that service will need to be re-instated as part of Phase A.

Roads and Pedestrian Pathways

The building can be accessed directly from Outer Circle Road. The schematic site plan builds on key principles of the Campus Master Plan (linkages, views, transparency) which create both indoor and outdoor environments for social interaction and an enhanced connection to the campus' natural setting. As well, UTM has just completed improvements to its sidewalk system along Outer Circle Road.

Bicycle Parking

Bicycle storage must be provided in a convenient location as part of this project; requirements are further detailed in U of T's Landscape Design Standards.

Servicing and Fire Access

The building can be accessed directly from Outer Circle Road.

Deferred Maintenance

The construction of Phase A will eliminate any deferred maintenance issues with Block A and will provide future opportunities to address issues in the remaining blocks.

f) Secondary Effects

In anticipation of Phase A's implementation, UTM has taken measures to vacate as much of Block A as possible. Most of the second floor of Block A had been occupied by the Department of Anthropology and this past summer its academic and administrative offices and research facilities were moved into their new permanent home in the Terrence Donnelly Health Science Complex. The department's undergraduate teaching facilities are scheduled to be relocated to new locations in the William G. Davis Building at the end of the winter 2012 semester. Until then, the department continues to use the North Building second floor facilities.

The Theatre and Drama Studies program had rehearsal halls and associated support facilities on the first floor of Block A. Prior to the fall 2011 semester, former classrooms were renovated into temporary facilities for this program on the second floor of the North Building's Block C. Faculty from the Department of Historical Studies who were in Block A have also been moved to offices in Block C.

The Office of the Registrar continues to schedule three classrooms on the second floor of Block A but will only do so until the end of the winter 2012 semester. The scheduled activities in these rooms had already been planned for the new Instructional Centre and will not need to be replaced when Block A is demolished.

A number of secondary effects issues still need to be resolved before demolition of Block A can be undertaken:

- The existing elevator for the North Building will need to be replaced elsewhere in Block B or C; the design and construction of a new, accessible elevator has been approved for installation in an existing (but underutilized) mechanical room (NE145) and a portion of the current Dean's Lounge (NE262) that will require some furniture re-arrangement.
- Food Services will lose a sizeable operation on the first floor that cannot be temporarily replaced in its entirety; however, the existing Tim Hortons coffee kiosk will be relocated from the cafeteria to a room in Block C, NE173 (currently assigned to Computer Services staff), that is conveniently located next to an entrance and has reasonable crush space.
- Facilities Management & Planning (FM&P) will release a storage room (NE137A) and relocate the Computer Services staff from NE173.
- Computer Services shares a closet (NE113) with FM&P and uses it as a data closet; the equipment in this room will need to be relocated into Block B (location still needs to be determined) and existing data lines re-routed.
- The Registrar controlled 50-seat classroom, NE129, is located immediately adjacent to the proposed construction zone and will be moved to room, NE143, and re-configured as a 30-seat classroom.
- The aforementioned classroom will be re-assigned as the student computer study room (currently located in NE165A); room NE165A is needed to accommodate new hires.
- The existing custodial staff area (NE127, NE127A and NE127B) will either be lost during demolition or, at the very least, access to them will be cut off; for the duration of construction, custodial staff will be instructed to use similar facilities in the Instructional Centre.
- The small receiving area in Block A will be lost and will not be temporarily replaced; instead, deliveries will be re-directed to the entrances off Parking Lot 1 (for the first floor) and to the second floor entrance (when available).
- The waste bins that are currently housed in a small, gated compound by the receiving door will be relocated to a temporary gated compound in Parking Lot 1.
- The Erindale Studio Theatre's existing domestic water, telecommunications and electrical services are fed from the North Building; these will be lost during construction and will need to be re-fed from a new location. The new electrical feed is under investigation by UTM's service provider, Enersource, and Computer Services is investigating options for maintaining its services. FM&P is investigating possible route for re-directed domestic water service.
- Currently, only one of the two first floor entrances into Block B is accessible; the inaccessible entrance (NE153S) will need to have the sidewalk and landing coming to this entrance re-landscaped (raised) and new power-operated doors installed.
- The existing sanitary sewers from the North Building and the Erindale Studio Theatre may be lost when Block A is demolished, UTM anticipates that any need for a temporary service will be included as part of the work for a new sanitary service for both buildings.

In the past, UTM's service providers have worked closely with contractors and campus users to assist with a number of project-related activities; such as, moves, staging of materials, storage of furniture, furnishing and equipment, clean ups, etc. and it's anticipated that these services will continue to be offered without charge to the project. Any issue that has not been included in the TPC, but needs to be addressed through the course of demolition and construction, will be by the appropriate UTM agency in conjunction with the project tea

g) Schedule

Planning & Budget meeting	January 11, 2012
Business Board meeting	January 30, 2012
Design Team Selection	February 2012
Relocation of 'Block A' occupants	May 2012
Construction Start (demolition and site excavation)	May (or asap) 2012
Occupancy	August 2014

Demolition to occur over the summer months when fewer students are on campus. The majority of the construction work is to be performed inside normal working hours.

Work outside normal operating hours is to be restricted to essential but very noisy work or work that requires shutdown of services to adjoining occupied spaces. This work must be scheduled and agreed to in advance of it occurring.

The construction schedule is to work around and accommodate exam periods.

IV Resource Implications

a) Total Project Cost Estimate

The total estimated project cost for the North Building reconstruction, Phase A, is $56M, which will be the budget for the project. This includes a new building of 10,440 GSM (112,400 GSF), and 5,220 NASM's. It assumes that construction will start in the spring of 2012 and that the building will be ready for occupancy for the fall term, 2014.

A construction cost estimate was prepared by the firm of Marshall & Murray, to which some upward adjustments have been made to allow for additional excavation, site work and connection issues with the portion of the North building that remains until further phases can be built. The estimate assumes that the building will be delivered under a design-build format.

Included in the budget are estimates or allowances for the following:

- The design-build team, design and construction amount, which includes partial demolition of the existing building, new construction, and site work and soft landscaping in the immediate vicinity of the new construction.
- LEED silver certification.
- Secondary effects as follows: temporary waste bin area, relocated BEF, telcom rearrangements, disaster recovery centre, closet relocate, new "temporary" elevator, accessibility improvements, temporary Tim Horton's location, minor temporary service rearrangements.
- A lump sum allowance for infrastructure upgrade work to be carried out by UTM.

- Permits, project management fees, misc compliance, inspection and commissioning work.
- Data service, Telephones, A-V.
- Moving, furnishings and equipment.
- Security, signage and misc costs.
- Finance costs are calculated based on cash flow provided by UTM.

Other than the infrastructure allowance noted above, the budget does ***not*** include:

- Utility and infrastructure work outside the immediate site –
  - New electrical service.
  - Water, Storm or Sanitary system relocates or upgrades.
  - Gas service.
  - Heating and cooling plant and distribution.
- The budget also does not include kitchen and servery equipment and fitout. These areas will be delivered as serviced but shelled areas, with design, lighting, wall & ceiling finishes millwork fitout and equipment by others.

b) Operating Costs

Based on the projected operating costs for the recently completed Terrence Donnelly Health Science Complex, Phase A of the North Building Reconstruction is projected to have direct operating costs of $1,251,660 per annum and indirect costs of $387,440 per annum in 2011 dollars. With the current annual pro-rated operating costs for the North Building (Block A) of $316,500 for direct and indirect costs, Phase A is thus projected to have a net direct and indirect operating cost total of $1,322,600 per annum. Provision has been made for these additional operating costs within the 5-year operating budget of UTM.

The Terrence Donnelly Health Science Centre was selected as a benchmark building for operating cost estimation for new buildings because it is a mixed use academic building that is expected to be certified as LEED Silver.

c) Funding Sources

The estimated Total Project Cost of the North Building Reconstruction project is $56 million. $35 million will be funded by the Provincial Government, $17 million in borrowing, $0.9 million from UTM's Graduate Capital Expansion Fund, and $3.1 million to be funded by UTM from one-time capital reserves.

Phase A development is expected to generate interest/investment in future Phases B + C (currently not funded).

V Recommendations

Be it recommended to the Academic Board

1. THAT the Project Planning Report for the University of Toronto Mississauga, North Building Reconstruction, Phase A, dated December 16, 2011, be approved in principle.

2. THAT the project scope, covering 5,220 nasm, as identified in the Project Planning Report be approved in principle at a total project cost of $ 56M with funding as follows:

Provincial Government	$ 35.0M
Funds from borrowing	$ 17.0M
UTM capital reserves	$ 3.1M
UTM Graduate Expansion Fund	$ 0.9M
Total	$ 56.0M

APPENDICES:

1. Existing Departmental Space Allocation
2. COU Space Guideline Analysis
3. Room Data Sheets (under separate cover)
4. Food Services Concept Overview and Vision
5. Total Project Cost Estimate (on request to limited distribution)
6. Cash Flow Analysis (on request to limited distribution)
7. Project Scope Document For Cost Consultant (on request)
8. 2011 Master Plan: Campus Planning Principles
9. 2011 Master Plan: Site 7 North Campus Expansion
10. University of Toronto Design Standards
    www.fs.utoronto.ca/aboutus/design.htm

APPENDIX 1

Existing Departmental Space Allocation

Food Services (existing to be demolished)

Building	Room	Description	Stn	Nasm
North Bldg	104	Cafeteria Storage	0	5.22
North Bldg	105	Cafeteria Preparation	0	36.31
North Bldg	105A	Cafeteria Preparation	0	1.66
North Bldg	105B	Cafeteria Preparation	0	12.72
North Bldg	106	Cafeteria Dishwasher	0	16.86
North Bldg	111	Cafeteria Dining Area	142	416.01
North Bldg	127A	Food Service - Staff Washroom	0	3.47
				492.25

Mathematics & Computational Science

Building	Room	Description	Stn	Nasm
CCT	3065	Faculty Office Single	1	14.41
CCT	3067	Faculty Office Single	1	12.65
CCT	3071	Faculty Office Single	1	12.67
CCT	3073	Faculty Office Single	1	14.41
CCT	3075	Faculty Office Single	1	15.38
CCT	3077	Faculty Office Single	1	15.36
CCT	3079	Faculty Office Single	1	15.83
CCT	3081	Faculty Office Single	1	15.33
CCT	3083	Faculty Office Single	1	11.19
CCT	3085	Faculty Office Single	1	11.42
Davis Bldg	1154	Computer Classroom - Flat Floor		127.31
Davis Bldg	1158	Computer Classroom - Flat Floor		91.37
Davis Bldg	1160	TA Office Multi		55.1
Davis Bldg	1161	Research Lab		55.32
Davis Bldg	3296	Post-Doc Fellow Office Single	1	14.16
Davis Bldg	3297	Post-Doc Fellow Office Single	1	12.32
Davis Bldg	4002	Supp Admin Office Single	1	14.17
Davis Bldg	4003	Supp Admin Office Single	1	13.84
Davis Bldg	4004	Faculty Office Single	1	19.49
Davis Bldg	4005	Supp Admin Office Single	1	13.26
Davis Bldg	4006	Supp Admin Office Single	1	13.55
Davis Bldg	4038	Faculty Office Single	1	13.97
Davis Bldg	4041	Faculty Office Multi	2	13.83
Davis Bldg	4044	Faculty Office Single	1	13.83
Davis Bldg	4055	Faculty Office Single	1	13.44
Davis Bldg	4061	Faculty Office Single	1	13.83
Davis Bldg	4062	Faculty Office Single	1	13.83
Davis Bldg	4063	Faculty Office Multi	2	13.28

Davis Bldg	1144D	Post-Doc Fellow Office Multi	2	14.12
Davis Bldg	1144F	Post-Doc Fellow Office Multi	2	12.82
Davis Bldg	1144G	Post-Doc Fellow Office Single	1	12.18
Davis Bldg	1157A	Research Lab		22.4
Davis Bldg	1157B	Research Lab		67.38
Davis Bldg	3093B	Faculty Office Multi	1	16.51
Davis Bldg	3093B	Post-Doc Fellow Office Multi	1	16.51
Davis Bldg	3093C	Faculty Office Single	1	16.18
Davis Bldg	3093E	Math Help Room		32.94
Davis Bldg	3093F	Faculty Office Multi	2	17.3
Davis Bldg	3093G	Faculty Office Multi	2	15.23
Davis Bldg	3093H	Faculty Office Multi	2	15.23
Davis Bldg	3201B	Office Storage	0	2.65
Davis Bldg	4007B	Lounge, Copy, Meeting, Storage	1	13.91
Davis Bldg	4059B	Faculty Office Single	1	13.19
Davis Bldg	4059C	Faculty Office Single	1	13.33
Davis Bldg	4059F	Post-Doc Fellow Office Multi	2	13.45
				979.88

Psychology (AWB)

Building	Room	Description	Stn	Nasm
Davis Bldg	1031	P.U.M.P. Room		38.52
Davis Bldg	1033	Supp Admin Office Single	1	10.82
Davis Bldg	1151	MAC Computer Lab		140.68
Davis Bldg	1151A	Faculty Office Single	1	13.86
Davis Bldg	1151B	Faculty Office Single	1	18.43
Davis Bldg	2037	Faculty Office Single		18.79
Davis Bldg	2037A	Supp Admin Office Single	1	10.91
Davis Bldg	2037B	Reception/Mail/Photocopy	0	12.01
Davis Bldg	2037C	Supp Admin Office Multi	2	15.28
Davis Bldg	3001A	Research Lab	0	24.42
Davis Bldg	3061	Lab Prep/Graduate Office Single	0	12.63
Davis Bldg	3061A	Lab Storage	0	9.11
Davis Bldg	3061B	Research Lab	0	8.62
Davis Bldg	3062	Lab Prep/Graduate Office Multi	0	24.33
Davis Bldg	3062A	Research Lab	0	8.37
Davis Bldg	4001	Seminar Room	25	39.52
Davis Bldg	4023A	Faculty Office Single	1	11.45
Davis Bldg	4023B	Faculty Office Single	1	12.2
Acad Annex	101	Seminar Room	0	23.28
Acad Annex	111	Kitchenette (Shared)	0	6.09
Acad Annex	118	Testing Room	0	11.36

Acad Annex	120	Testing Room	0	11.36
Acad Annex	122	Biomarker Sampling/RA Office Single	0	23.2
Acad Annex	201	Research Assistants Office Multi	0	23.28
Acad Annex	202	Graduate Office Multi	0	23.22
Acad Annex	203	Research Assistants Office Multi	0	11.38
Acad Annex	204	Graduate Office Multi	0	11.36
Acad Annex	205	Research Assistants Office Multi	0	11.38
Acad Annex	206	Graduate Office Multi	0	11.23
Acad Annex	207	Testing Room	0	11.38
Acad Annex	211	Lab Waiting Area	0	13.53
Acad Annex	212	Research Assistants Office Multi	0	19.83
Acad Annex	214	Testing Room	0	11.36
Acad Annex	216	Testing Room	0	11.36
Acad Annex	217	Testing Room	0	11.36
Acad Annex	218	Faculty Office Single	1	11.36
Acad Annex	219	Control Room	0	11.36
Acad Annex	220	Faculty Office Single	1	11.36
Acad Annex	221	Control Room	0	11.36
Acad Annex	222	Faculty Office Single	1	11.36
Acad Annex	223	Control Room	0	11.34
Acad Annex	224	Faculty Office Single	1	11.36
Acad Annex	226	Lab Storage	0	1.8
Acad Annex	200A	Lab Storage	0	6.58
				763.79

Theatre and Drama Studies

Building	Room	Description	Stn	Nasm
North Bldg	135	Scenery Storage	0	**35.67**
North Bldg	227A	Hand Prop Storage & Workshop	0	37.9
North Bldg	253	Faculty Office Single	0	12.43
North Bldg	256	Stipend Office Multi	1	12.43
North Bldg	258B	Faculty Office Single	1	12.12
North Bldg	258C	Faculty Office Single	1	14.46
North Bldg	287	Rehearsal Hall B	0	79.08
North Bldg	287A	Rehearsal Hall C	0	25.44
North Bldg	292	Rehearsal Hall A	0	107.38
North Bldg	292A	Prop Storage	0	20.21
North Bldg	292B	Stage Manager's Office	1	11.83
North Bldg	292C	Costume & Prop Storage	0	31.67
North Bldg	292D	Director's Office	1	5.57
North Bldg	296	Part Time Acad/Stipend Office	2	13.86
				420.05

APPENDIX 2

COU Space Guideline Analysis

Department Profile-existing and anticipated growth
Psychology AWB

	2011	2015-2016	Total
FTE Faculty (research)	6	4	10
FTE Faculty (Chair)	1	0	1
FTE Faculty (teaching)	3	0	3
FTE Faculty	10	4	14
PDFs	2	4	6
Research Associates	0	0	0
Graduate Students	8	22	30
Administrative Staff	4	1	5

Space Standards Calculations

	Existing					Growth						
Room Description	**Nasm**	**No. Units**		**Space Factor**	**Total Nasm**	**Nasm**	**No. Units**		**Space Factor**	**Total Nasm**	**Total Calc. Exist + Growth Nasm**	**Proposed Program Nasm**	**Notes/Program Adjustments:**
Offices:													UTM uses the following standards
Faculty Offices	13	x 10	x	1.15 :	150	13	x 4	x	1.15 :	60	**209**	**212**	12 nasm/office
PdFOffices	6.5	x 2	x	1 :	13	6.5	x 4	x	1 :	26	**39**	**36**	6.5 nasm/PDF
Graduate Office	4	x 8	x	1 :	32	4	x 22	x	1 :	88	**120**	**120**	4 nasm/workstation
Supp Admin Offices	13	x 4	x	1 :	52	13	x 1	x	1 :	13	**65**	**56**	12 nasm/office; 10 nasm/workst.
Subtotal:					**247**					**187**	**433**	**424**	
				x	25 %				x	25 %			
Office Support:					**62**					**47**	**108**	**94**	
	Nasm	**No. Units**				**Nasm**	**No. Units**						
Teaching:	3	x 68		:	**204**	3	x 16		:	**48**	**252**	**281**	Computer Lab only; based on prelim. design with OSM
	Nasm	**FTE Faculty (Rsrch)+PDF/2+Grad/2**				**Nasm**	**FTE Faculty (Rsrch)+PDF/2+Grad/2**						
Research:	20	x (7+(2+8)/2)		:	**240**	20	x (4+(4+22)/2)		:	**340**	**580**	**636**	Group C space factor
					752					**622**	**1374**	**1435**	**nasm Total**

Department Profile-existing and anticipated growth *MCS*				
	2011	**2015-16**	**Total**	
FTE Faculty (research)	13	6	19	6 growth: 2 current search + 1 CRC + 3
FTE Faculty (Chair)	1	0	1	
FTE Faculty (teaching)	9	3	12	
FTE Faculty	23	9	32	
PDFs	10	1	11	
Research Associates	0	0	0	
Graduate Students	0	9	9	16 PhD and 3 Masters: split between St.G and UTM
Administrative Staff	4	0	4	

Space Standards Calculations

	Existing					**Growth**					**Total Calc.**	**Proposed**	
Room Description	**Nasm**	**No. Units**		**Space Factor**	**Total Nasm**	**Nasm**	**No. Units**		**Space Factor**	**Total Nasm**	**Exist + Growth Nasm**	**Program Nasm**	**Notes/Program Adjustments:**
Offices:													UTM uses the following standards
Faculty Offices	13	x 23	x	1.15 :	344	13	x 9	x	1.15 :	135	**478**	**426**	12 nasm/office
PdFOffices	6.5	x 10	x	1 :	65	6.5	x 1	x	1 :	7	**72**	**72**	6.5 nasm/PDF
Graduate Office	4	x 0	x	1 :	0	4	x 9	x	1 :	36	**36**	**36**	4 nasm/workstation
Supp Admin Offices	13	x 4	x	1 :	52	13	x 0	x	1 :	0	**52**	**51**	12 nasm/office; 10 nasm/workstn
Subtotal:					**461**					**177**	**638**	**585**	
				x	25 %				x	25 %			
Office Support:					**115**					**44**	**159**	**91**	
	Nasm	**No. Units**				**Nasm**	**No. Units**						
Teaching:	3	x 90		:	**270**	3	x 10		:	**30**	**300**	**476**	2x50 station Computer Labs only; based on prelim. design with OSM
	Nasm	**FTE Faculty (Rsch)+PDF/2+Grad/2**				**Nasm**	**FTE Faculty (Rsch)+PDF/2+Grad/2**						
Research:	5	x (14+10/2)		:	**95**	10	x(6+(1+9)/2)		:	**55**	**150**	**143**	Comp. Sci. Group D space factor
					941					**306**	**1247**	**1295**	**nasm Total**

APPENDIX 3

Room Data Sheets
(under separate cover)

APPENDIX 4

Food Services Concept Overview and Vision

Prepared by Bill McFadden, Director, Hospitality & Retail Operations, Food Services & Retail Planning, UTM

Food Services Concept Overview and Vision

The North Building food service outlet should ideally be situated on the ground floor of the building so the back of house area (dry and temperature controlled storage, ware-washing) is adjacent to the receiving and waste staging areas while simultaneously fronting onto the main assembly and seating areas. Further the seating/dining area would best be situated in a fashion as to overlook the North Field and adjacent woodlot. This seating placement will enable the community to enjoy the natural beauty of the UTM campus while dining, studying or taking a break from the rigours of academia.

The service entrance to the cafe should be connected to the receiving and waste staging areas by a service corridor. Deliveries will travel down the corridor through a set of double doors into the back of house area and into the dry or refrigerated/frozen storage located immediately within the café. Food products will be processed and finished in the adjacent preparation area and moved through the facility to the servery or front of house area to be further processed/ finished, merchandised and sold.

This food service outlet is to be designed in a fashion that allows the ease of movement between the front of house and back of house areas; designed in a way that there is no obvious distinction between the front and back of house. This open concept kitchen will simultaneously provide opportunities for labour efficiencies and establish connections between the preparation, service interface and UTM community.

The North Building food service outlet will feature:

- an open concept kitchen
- a wood-stone oven featuring: freshly produced breads, flat breads, quesadillas, and featured thin crust pizzas and sandwiches.
- a prepared from scratch soup kitchen featuring daily fresh soup and chili options
- a fresh, “prepared for you” salad concept featuring toppings that will include grilled proteins
- a nationally branded self-serve beverage concept with pastry
- a grab and go station featuring packaged sandwiches, salads, entrees and beverages.

Development and Implementation

The café will be designed by a consultant team consisting of a food service facility designer and an interior design firm specializing in the hospitality industry under the direction of the University of Toronto Mississauga Hospitality and Retail Services Department and the base building design team.

Key elements of the food service operation design will be:

- efficiency in product movement and production
- efficiency of customer movement and product selection
- centralized cash stations; single point of payment for product purchases
- selection of finishes that are complimentary to the building, are comforting and uplifting. These finishes will be:
    - ceramic wall tiles
    - stone tops on service counters
    - millwork finished in warm colours
    - flooring that is resilient and complimentary to the base building

Future Development and Relationship to Subsequent Phases

The siting of the café and lounge on the ground floor, with the dining and lounge area located at the exterior glazing, overlooking the North Field area, will enable expansion into subsequent phases of the North Complex as it develops. The plan, in principal, would be to:

- extend additional servery elements into the current adjacent common space and/or dining and lounge space. A re-direction of common circulation space may be required, and
- extend the dining and lounge into the subsequent adjacent phase in order to resize the dining and lounge areas as appropriate for the expanded North Complex community.

APPENDIX 8

2011 UTM Campus Master Plan:
Campus Planning Principles

UTM's Planning Principles have been created to help guide proposed campus development, and should be read in conjunction with review of proposed building envelopes.

They were derived from key concepts first presented in the 2000 Master Plan, and evolved in response to feedback from the UTM community. During an intense period of community engagement from January to April 2010, a series of meetings, a web link to the Master Plan from the UTM homepage and email contact allowed students, staff and faculty to provide feedback on the Planning Principles. Key themes emerged from this consultation, including:

- a desire for centralized outdoor common space;
- improved pedestrian connections on campus and to outlying areas;
- preservation of green space;
- increased campus amenity; and
- a well-articulated sense of UTM's academic mission and campus identity through built form.

The pages that follow outline Campus Planning Principles under seven headings >

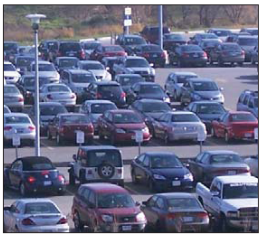
1. CAMPUS ENVIRONMENT
2. LAND USE
3. MASSING
4. BALANCED INTENSIFICATION
5. SUSTAINABILITY
6. ACCESSIBILITY
7. HERITAGE PRESERVATION

North Field (future Campus Green)

The existing North Field has the potential to serve as a unifying element on the UTM campus if enhanced as a multi-use, flexible open space accessible to the broader University community. It is the largest single open space at UTM, comparable in scale to St. George's Front Campus.

Engaging the Ecological Context

UTM's existing Nature Trails provide an entry point into the rich ecological zones along the Credit River valley. The trail network can be enhanced to provide greater accessibility and connection to the University's unique natural context.



Land Allocation

The supply of parking on campus remains a challenge and a particularly inefficient use of land if constructed as surface level-only. Solutions lie in a combination of enhanced transit options and reduced-footprint parking amenities.

CAMPUS ENVIRONMENT

The University community's environment must:

- support intellectual aspirations of its community;
- build on a fundamental framework of social and environmental amenity;
- be vibrant and encourage activity;
- relate buildings to landscapes and create a logical sequence of movement;
- provide shelter and active travel between buildings;
- be safe, secure, and accessible;
- respect and engage with the unique ecological context; and
- maintain and enhance a central unified open space, as a unifying element on campus.

This Principle defines the vision and aspiration of spaces between buildings. The principles under Campus Environment recognize the University's unique sense of place as far more than the sum of its parts.

Related section under Opportunities & Challenges: Open Space

LAND USE

Uses and functions assigned to the campus' physical environment must:

- promote the University's academic goals and serve its overall mission;
- consider non-academic uses that are compatible with, contribute to and engage the University community;
- enhance the connection between residential and academic life;
- respect and engage with the ecological context;
- seek opportunities to animate the campus, particularly by locating active use at the ground floor level and providing transparency between indoor and outdoor spaces; and
- ensure a visionary campus plan where parking, transit, servicing and traffic planning coordinate with existing and future buildings.

Unlike the 2000 Plan, this Master Plan does not identify specific building programs or land use zoning for each development site. The Land Use Principle provides overarching intent within an otherwise flexible framework.

Related sections under Opportunities & Challenges: Circulation, Open Space, Environment and Housing

MASSING

The form and scale of future expansion should define and develop appropriate relationships with surrounding buildings and landscapes. New construction must take into account impact on micro-climatic conditions creating an animated streetscape, and minimizing shadow and wind conditions.

Erindale Hall is a positive example of built form on campus, appropriate in scale and proportion. The north face of the residence building gives definition to the Five-minute Walk stretching between the Student Centre and North Building; the south side undulates to allow greater view and connection in response to the surrounding natural environment.

Erindale Hall, north elevation

In addition to successfully negotiating two very different campus conditions to the north and south, Erindale Hall provides a colonnade running parallel to the 5-Minute Walk for use during inclement weather.

BALANCED INTENSIFICATION

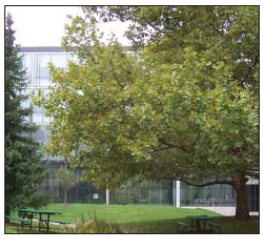
Future campus development must enhance, not overwhelm, existing University environs while making efficient use of limited campus land. The Plan seeks to:

- balance the desire for consolidation and the desire to connect to the outdoor environment;
- enliven and shape the spaces between and within buildings;
- strive to achieve the appearance of a complete campus at each phase of the plan; and
- ensure the adjacent community is addressed in scale and presence, while presenting a prominent and inviting image of an academic institution.

Though the Principle of Balanced Intensification applies equally to all three University campuses, the context is quite different. Despite a large land holding, UTM must be sensitive in its development footprint. UTM is unique, given its proximity to the Credit River, its woodlands, and its location within a predominantly residential district. In response, academic expansion sites are contained primarily within the ring road. In addition to sensitivity toward existing context, new buildings must also be thoughtful in creation of new context. As stated in the 2000 Master Plan "each building project is responsible for creating the open space that surrounds it".

Recreation, Athletics & Wellness Centre (RAWC)

The RAWC has created a positive street presence along Outer Ring Road and serves to connect through to the Davis Building beyond. Its massing at the street level helps to identify the building as a secondary gateway to the inner campus.



Communication, Culture and Technology Building, CCT

An example of enlivening and shaping the spaces between buildings, the CCT's siting in relation to the Davis Building created an intimately-scaled outdoor courtyard. Glazing along perimeter walls allows visual connection to the exterior from interior ground floor spaces.

Related sections under Opportunities & Challenges: Open Space and Environment; and Sites & Sectors

SUSTAINABILITY

Solar Panel Array, Davis Building

The solar panel retrofit on the Davis Building is a prominently displayed example of a sustainable energy technology in use at UTM. Displays inside the building provide real-time energy use data.

Beyond reduced environmental impact, the University of Toronto Mississauga seeks to:

- take a leadership role in line with the University's overall mission;
- advance opportunities to link sustainability principles with research and teaching;
- promote its environmental achievements on campus and to the out side community;
- meet the University's stringent Design Standards related to environmental measures, and continue to strive beyond minimum requirements;
- incorporate technological advancements in building and landscape design, and seek partnerships where appropriate;
- encourage bicycle commuting and transit-oriented modes of travel; and
- enhance, connect and respond to the Campus' ecological context.

Bike Share program

Students, faculty and staff can sign out a bicycle free of charge to use for up to 24 hours. This recent initiative is promotes active lifestyles and provides alternative transportation to improve the local air quality and campus parking congestion.

Environmental stewardship continues to be a high priority in discussions with the UTM community given the campus' naturalized context and the institution's emphasis on environmental sciences, sustainability, biodiversity and climate in programs such as geography, chemical and physical sciences, and management.

Recent buildings reflect both UTM's banner for growth – *Grow Smart, Grow Green* – with the Hazel McCallion Academic Learning Centre completed in 2006, the first building on campus to achieve LEED® Silver certification, and current projects (registered with the Canada Green Building Council (CaGBC)) aiming to achieve LEED® Silver or higher.

Related section under Opportunities & Challenges: Sustainability

Green Roof, RAWC Building

The green roof on the RAWC facility is an example of sustainable building technology that mitigates storm water runoff, provides additional habitat for local species, and reduces both building cooling loads and the campus' urban heat island effect.

ACCESSIBILITY

The University's buildings and landscape must accommodate a diverse population in an open and inclusive campus. The campus environment should adhere to the principles of universal design.

UTM is a relatively new campus and as such largely accessible. Nonetheless, certain improvements can be made such as to the ramp at the main entrance to the Davis Building and the front door to campus. The design of the ramp also could be better integrated into the architecture.

Standards are anticipated to become more stringent in the near future once the Accessibility of Ontarians with Disabilities Act (AODA) *Accessible Built Environment Standard* is legislated.

Related section under Opportunities & Challenges: Accessibility

Accessible Entry, Davis Building

All buildings and connections to buildings throughout the campus should strive to be universally accessible. This accessibility should be integrated into the design process of new and renovated facilities.

HERITAGE PRESERVATION

The University of Toronto seeks to protect and maintain its heritage properties and landscapes. Listed and designated properties should not be considered in isolation, but as character-defining elements within the overall campus context. Development should respect and engage with the contextual value of these heritage elements.

There are only two designated heritage properties on campus (Lislehurst, and Alumni House) both outside Outer Circle Road. The Student Centre and the 1968 wing of the South Building (now the Davis Building) are listed buildings within the ring road, where most future development will occur.

Mississauga Road is recognized as a Cultural Landscape, as it is one of the City's oldest and most picturesque thoroughfares. The Master Plan is sensitive to UTM's unique context.

Related section under Opportunities & Challenges: Heritage

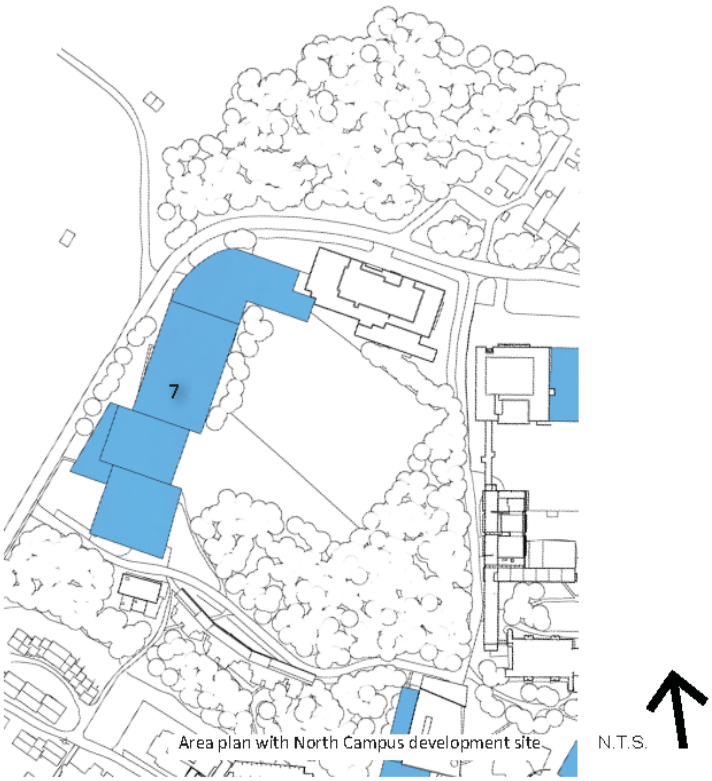
Cultural Landscape, Mississauga Road

This picturesque thoroughfare serves as one of UTM's campus edges and has a distinct character that should be handled with sensitivity.

APPENDIX 9

2011 UTM Campus Master Plan:
Site 7 North Campus Expansion

Area Plan:



Area plan with North Campus development site

Proposed new development in this sector includes the following:

Site 7 North Campus expansion

SITE 7: North Campus expansion

View of North Building's west facade with entrance drop-off in foreground

North Building service entry at the south of the site

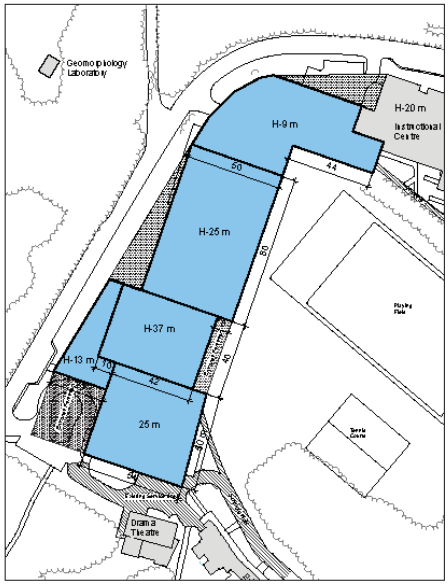
Site 7 Context:

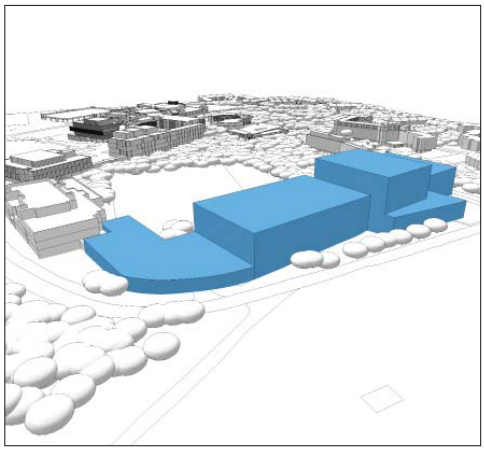
Site 7 is the current location of the North Building and parking Lot 1. The building, constructed more than 40 years ago as a temporary structure, does not meet current and projected space needs for Humanities. Furthermore, the scale, proportions and materiality of the North Building no longer fit the context of a campus, which has matured substantially over the last decade.

The site is located between the western-most portion of Outer Circle Road, one level above the main campus, and the proposed Campus Green. The current low-slung 2-storey structure lacks a sense of arrival or destination from both the Five-minute Walk approach, and the main road. The proposed north expansion presents an opportunity to anchor this end of campus. Full development of the site will complete the pedestrian connection between the Five-minute Walk and the new Instructional Centre.

The proposed envelope is configured to accommodate the likelihood of phased demolition of the North Building, and construction of a series of projects over time. Development of Site 7 will eventually involve the demolition of parking Lot 1 and thereby require that the 115 existing parking spaces be relocated elsewhere on campus or incorporated into development.

Proposed Envelope Capacity:





View southeast toward Site 7

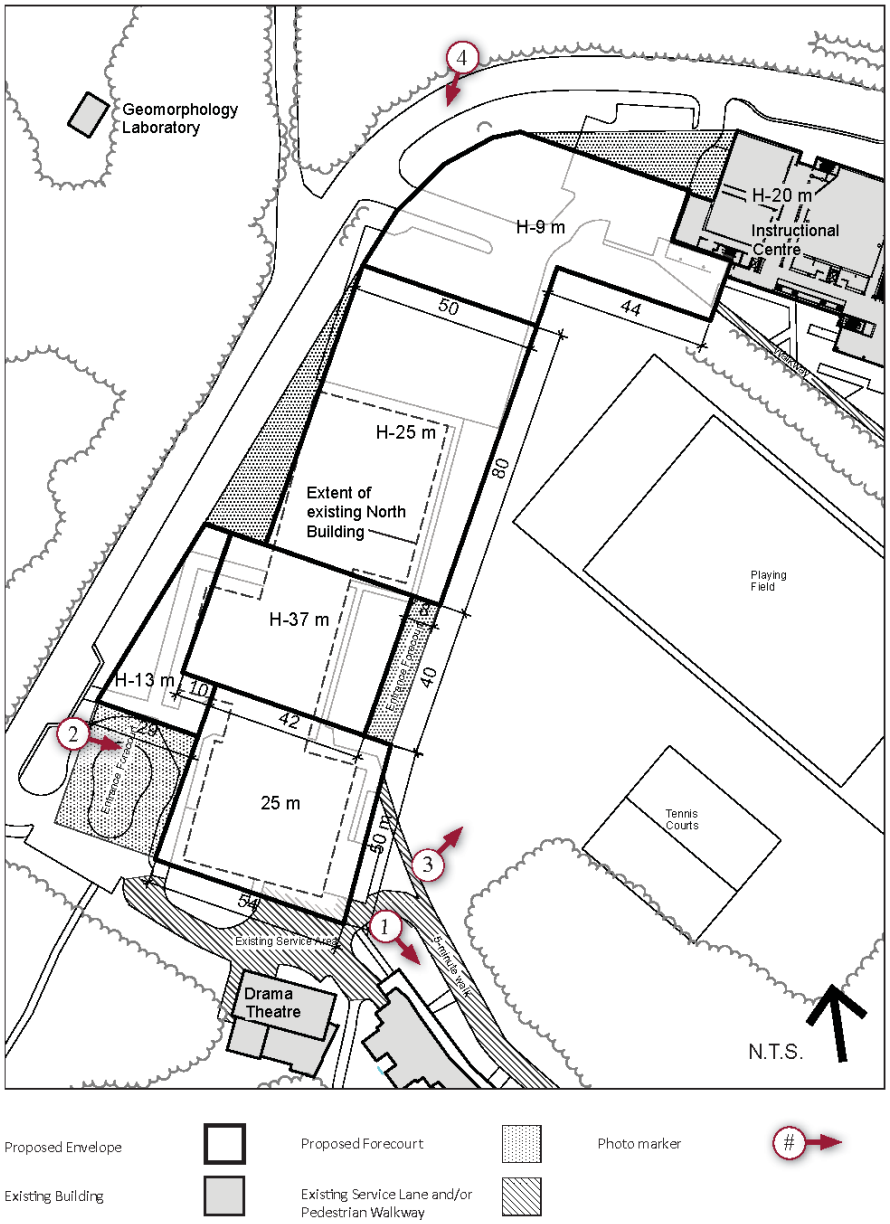
Proposed Courtyard/Forecourt
Service/Pedestrian Walkway
Existing Building
Proposed Envelope

Proposed Envelope:

Proposed Envelope:	68,034 gsm
Discounted Envelope:	57,829 gsm
Maximum Height:	37 m

Use Assumptions:
Heights are taken from the elevation at Campus Green, approximately one storey below Outer Circle Road.
The proposed envelope accounts for phased demolition of the North Building, and phased construction.

SITE 7: North Campus expansion



Site Photos:

View from North Building service lane to the Five-minute Walk and Erindale Hall

Drop-off loop in front of North Building

View of athletic field (future Campus Green) and Instructional Centre under construction

View from Outer Circle Road toward parking Lot 1 and the North Building

SITE 7: North Campus expansion

Development Context:

Secondary Effects:
- The proposal calls for demolition of the North Building.

Parking:
- There are 115 parking spaces on this site, most of which will be impacted by development.
- Opportunities to incorporate parking into future Site 7 development should be considered.

Servicing:
- The site can be served directly from Outer Circle Road at any point. Given the vastness of the site footprint and potential area, more than one service entry may be desirable.
- Connecting to, and expanding, the Instructional Centre Shipping & Receiving area should be considered.

Pedestrian Routes:
- A building or series of buildings on this site should locate main entrances based on future pedestrian paths of travel across the Campus Green, in addition to the existing Five-minute Walk.
- The new buildings should link to the Instructional Centre's main pedestrian thoroughfare. Similar to the CCT Link, interior connections should be transparent where possible to provide views to the outside, and animate the building at grade.

Height and Massing:
- The proposed envelope anticipates large volume spaces such as theatres, classrooms, assembly space.
- A 9-storey tower visually anchors the proposed volume; it allows potential efficiencies for stacked construction of repetitive modules such as offices and labs.
- Stepping down to a maximum of 6 storeys respects the height and scale of adjacent Erindale Hall.

Open Space:
- New construction will view, and frame the edge of, the future Campus Green.

Accessibility:
- New construction and major renovations must comply with the *Ontario Building Code*, and anticipate future legislation of more stringent requirements as identified under the AODA *Built Environment Standard*.

Site Data:

Existing Site Occupancy (above and below grade)

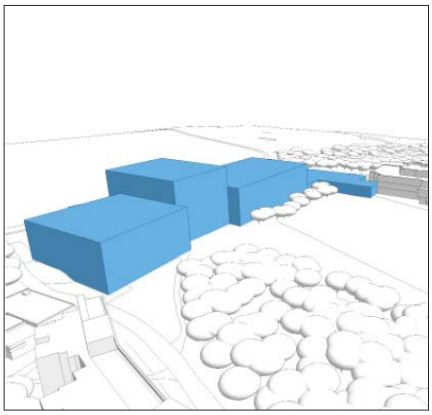
Building	Department	NASM	Gross	
North Building	AccessAbility Resource Centre	47		
	Anthropology	901		
	Business Services	12		
	Campus Infrastructure & Facilities	279		
	Computing Services	38		
	English & Drama	693		
	Food Services	490		
	French, German, Italian	442		
	Historical Studies	571		
	Human Resources	119		
	Microelectronics	27		
	Philosophy	263		
	Registrar	1995		
	Student Organizations	29		
	Unallocated Space	58		
	Utilities & Grounds	19		
	VP Academic	358		
	VP Research	14		
	TOTAL Site Area	**6,356**	**9,467**	to be demolished

Proposed Area (gsm)

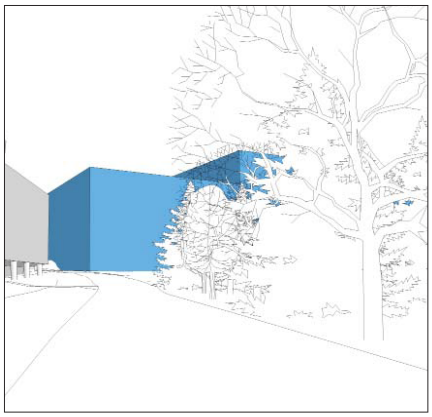
Discounted Envelope:	(above grade):	57,829
	(below grade):	12,651 (assumes 1 storey)
less Area to be Demolished:		9,467
Net Site Increase:		61,013 gsm

SITE 7: North Campus expansion

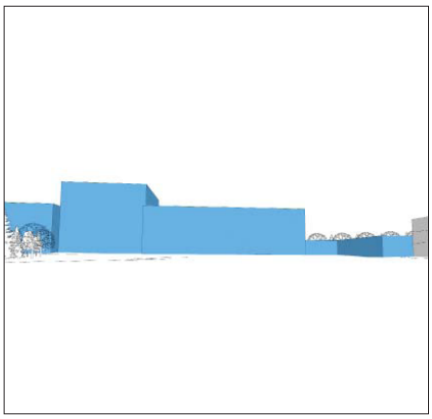
Additional 3D Views (Potential Envelope):



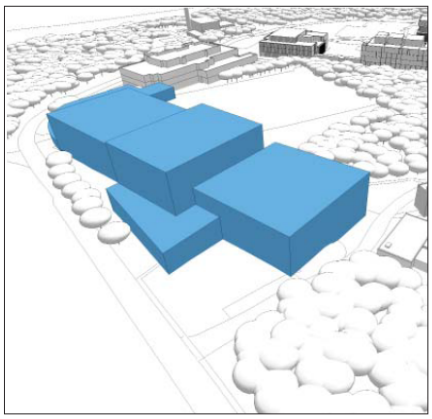
View toward northwest



View along Five-minute Walk

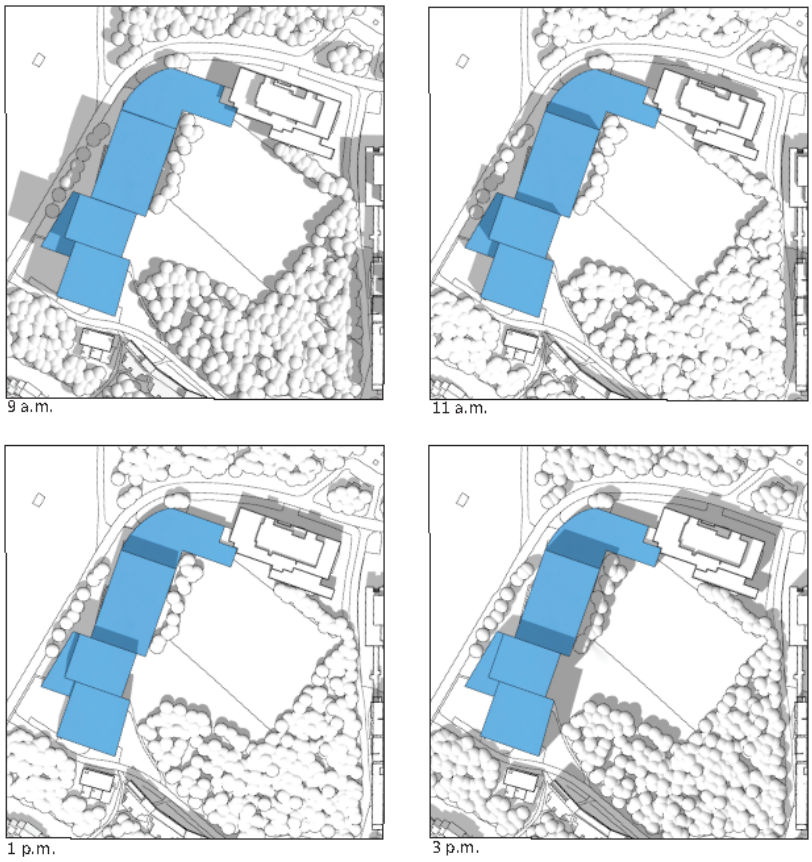


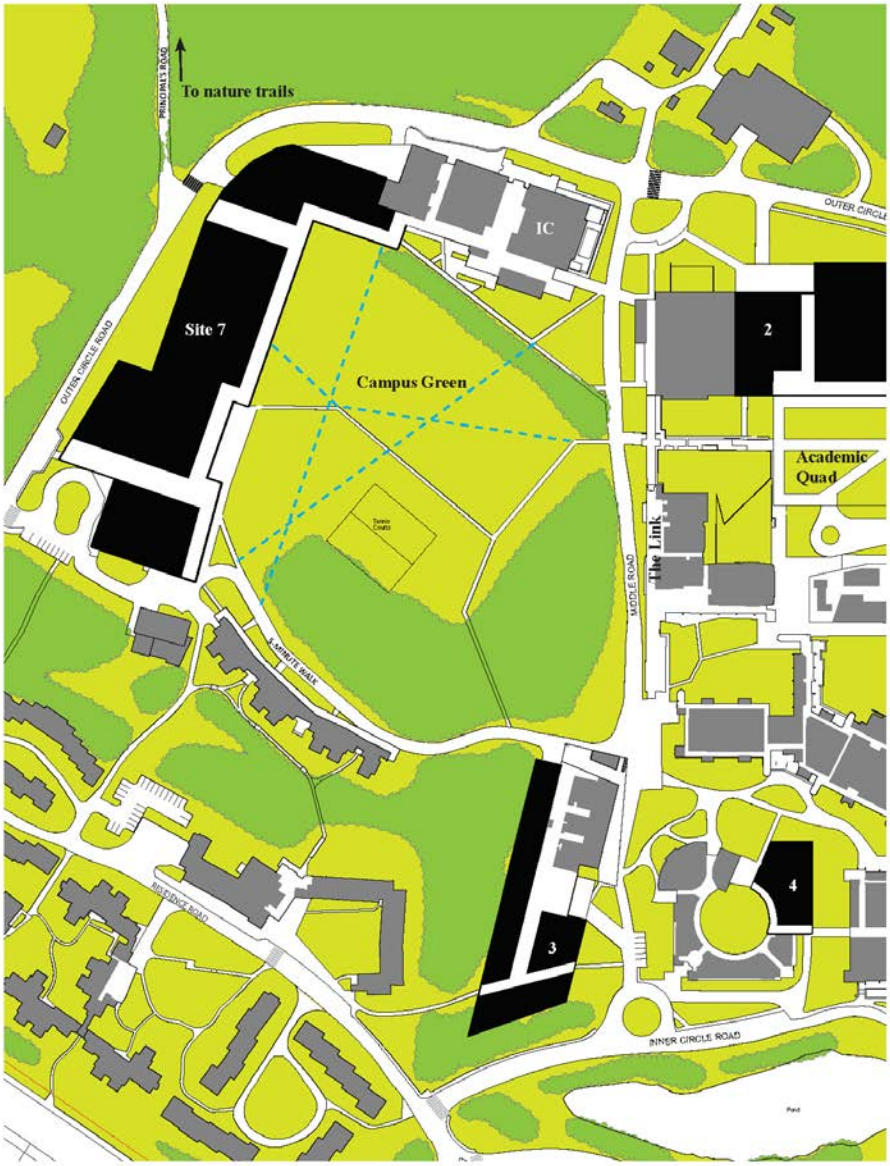
View from Campus Green



View toward northeast

Shadow Study (September 21):





North Campus Sector 'nolli' plan

Nolli plans show all means of pedestrian passage: streets, laneways, pedestrian pathways and interior 'streets' indicate the fine-grain at which the pedestrian experiences the UTM campus ('Nolli' plan is an architectural parlance, after Giambattista Nolli's map depicting circulation through Rome in the 1700's).

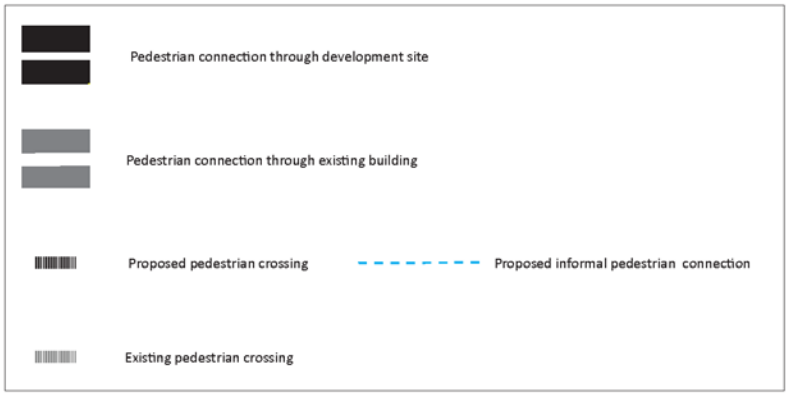
Pedestrian Circulation Plan (Nolli) with Development Sites

Development sites allow for expansion of University facilities within the campus boundaries, while also providing the opportunity to extend and enhance the pedestrian scale environment with the addition of new open spaces and pedestrian level pathways. Shown in black, development sites allow for linkages indoors and out, as illustrated by this plan.

The Instructional Centre (IC) plays a significant role at the campus planning level as it will define one edge of a large campus green, approximately equal in size to the Front Campus on the St. George Campus. A 'Campus Green' proposed in the current location of the north athletic field could instead become a multi-use outdoor space. The plan opposite identifies potential informal pathways across the green, as well as recently constructed paved paths. Both in terms of size and location, this open space offers potential for a multi-use gathering space, especially with the redevelopment of the North Building (Site 7). Uses could include informal gathering, student study and recreation, and could be activated by functions such as community events, alumni gatherings, convocation (now held at St. George), movies, reception, fairs, orientation, conferences etc.

Connections through proposed Site 7 emphasize:

- the continuation of the interior corridor through the newly constructed Instructional Centre;
- an interior connection facing the Campus Green, similar to the CCT Link;
- a prominent connection between a drop-off/pick-up point and UTM Shuttle stop along Outer Circle Road and the inner campus; and
- a second prominent connection to Principal's Road, which leads to the Paleomagnetism Lab, Forensics research area, Weather Station, Artist's Cottage, the Principal's Residence, and ultimately to the trails beyond. Improving safety by providing a pedestrian crossing in this location is critical, particularly in conjunction with new development.



APPENDIX 10

University of Toronto Design Standards
www.fs.utoronto.ca/aboutus/design.htm