Project Planning Report
for the
Medical Academy
at the
University of Toronto at Mississauga

October 10, 2006

Prepared by:
Campus & Facilities Planning

EXECUTIVE SUMMARY

The Faculty of Medicine and the University of Toronto at Mississauga (UTM) have had discussions for some years with regards to the potential expansion of the MD program at UTM. With the provincial Government's announcement of the enrolment expansion in MD programs in February 2006, a Project Planning Committee was established to develop a space plan for the accommodation of the increased number of medical students at the University. The higher enrolment and associated creation of the Mississauga Academy has implications for space, facilities, and infrastructure at the Medical Sciences Building on the St. George Campus, the University of Toronto at Mississauga Campus, and the proposed partner hospital sites – Credit valley Hospital and Trillium Health Centre.

The faculty at UTM and the community-affiliated hospitals will work in partnership with the Undergraduate Medical Education Preclerkship course directors to deliver the curriculum to the Mississauga Academy. The Mississauga Academy will focus on enhancing students' exposure to generalist practice (family and community medicine, general surgery, general internal medicine, general psychiatry, general pædiatrics, and general obstetrics/gynæcology) throughout the MD program.

The current MD enrolment will grow from 204 students to 218 by the start of the 2006/2007 academic year and another 6 students will be added by the following year for a total annual intake of 224 students by 2007/2008. The Mississauga Academy will have an enrolment of 36 students per year for an eventual steady-state total of 144 students in all four years of the MD program.

A distinctive component of the expanded MD program will be the use of advanced digital technology that will provide two-way, interactive videoconferencing system between the Medical Sciences Building and UTM. This system will enable distributed learning across the campus sites and ensure that all MD students share in the same learning experiencing regardless of their location.

The MD curriculum that will be delivered at the UTM Campus will be the same as what is found at the St. George Campus and will consist predominantly of lectures and other large group sessions, seminars and problem-based learning, as well as selected clinical skills training. The only curriculum exception will be that all MD students, regardless of campus location, will receive anatomy and related instruction in the specialized facilities in the Medical Sciences Building.

The increased number of medical students and the establishment of the Mississauga Academy have significant effect on space in the Medical Sciences Building and at UTM. At the Medical Sciences Building, an additional anatomy dissection laboratory and a small group teaching room have been developed within the existing suite of anatomy facilities. As well, two large lecture theatres will be renovated and upgraded, and a new *Discovery Commons* will be developed. The amount of space in the Medical Sciences Building that will be affected by enrolment expansion totals approximately 1,100 net assignable square metres.

At UTM, the Mississauga Academy will need approximately 1,990 nasm of new lecture theatres, classrooms, seminar rooms, videoconferencing and IT facilities, academic and administrative office and support space, and student amenities; these needs will be met through the renovation of space in the South Building that will be vacated by the library, the construction of a two-storey addition to the west end of the South Building, and through other UTM initiatives.

The Mississauga Academy provides a valuable opportunity for the Faculty of Medicine to provide a more community-based and community-oriented undergraduate curriculum. Students will be able to receive almost all of their instruction in Mississauga, either at the UTM campus, the community-affiliated hospitals, or in the greater community. The Medical Academy provides an opportunity to increase health science related teaching and research on the UTM campus.

Due to the amount of time that is required to properly plan, design and construct the necessary facilities at UTM, it will not be possible to complete construction and renovations for the arrival of the first intake of students at the Mississauga Academy in 2007/2008. An interim plan proposes to undertake minimal renovations in vacated library space in the South Building to provide approximately 385 nasm of space to accommodate the essential faculty, staff, services and instructional activities for the first year of the Academy. This interim space will allow the Academy to function while its permanent facilities are under construction with completion by the start of the 2008/2009 academic year.

The increase in MD enrolment and the establishment of the Mississauga Academy is projected to have a total capital cost of $20.107 million. Future phases of construction (approximately 330 nasm) will accommodate three new research laboratories for faculty to be recruited as part of the Academy at UTM. The Mississauga Academy project will set aside $3 million as its contribution towards these facilities with UTM supporting the balance, if required. Details of this project will be the subject of a later submission.

Provincial funding for this capital project will arrive in the form of a stream of payments annually over 20 years. The present value of annualized payments is $14.7 million. The balance of funding will be raised, or equally supported by participating Divisions. $6.107 million contingent financing will be raised through advancement or financed as short-term debt and carried by the two Divisions.

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FOR THE NEW MEDICAL ACADEMY
AT THE UNIVERSITY OF TORONTO AT MISSISSAUGA

I. Membership

Co-Chair Jay Rosenfield, Vice-Dean, Undergraduate Medical Education, Faculty of Medicine
Co-Chair Ray de Souza, Chief Administrative Officer UTM
Martin Schreiber, Preclerkship Director, Undergraduate Medical Education, Faculty of Medicine
Ramune Pleinys, Chief Administrative Officer, Faculty of Medicine
Robert Reisz, Chair, Department of Biology, UTM, and Chair, Resources, Priorities and Planning Committee, UTM
Kent Moore, Chair, Department of Chemical and Physical Sciences, UTM
Wes Robertson, Director, Administrative Computing, Faculty of Medicine
Avi Hyman, Director, Division of Academic Computing, Faculty of Medicine
Riet van Lieshout, Administrative Manager, Undergraduate Medical Education, Faculty of Medicine
Alison Fleming, Chair, Department of Psychology, UTM
Ryan Carroll, President, Erindale College Students Union (ECSU)
Danielle Kain, Undergraduate Student, Faculty of Medicine
Julian Binks, Capital Project Planning
William Yasui, Campus and Facilities Planning
Sol Kessler, Director, Infrastructure and Facilities, UTM
Joe Lim, Manager, Computing Services, UTM
Gail Milgrom, Managing Director, Campus and Facilities Planning
Jennifer Anderson, Administrative Coordinator, UME Enrolment Expansion, Faculty of Medicine
Susan Tremblay, Project Manager, UME Enrolment Expansion, Faculty of Medicine

II. Terms of Reference

The project Committee must address the following items:

1. Identify the requirements for additional academic space necessary to accommodate a Medical Academy at UTM (the “Mississauga Academy”).

2. Demonstrate that the proposed space program will be consistent with the Council of Ontario Universities’ space standards and best practice guidelines for clinical space necessary for the program.

3. Identify all secondary effects (including site remediation if hazardous materials are present) and including space reallocations within the existing building, impact on the delivery of academic programs during construction, and the relocation of existing units affected by the construction.

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

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

6. Identify all data and communication requirements and their related costs.

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

8. Determine a total project cost for the capital project including all aspects identified above.

9. Identify a funding plan for capital and operating costs.

10. Report by May 19, 2006.

III. Background Information

The Faculty of Medicine and the University of Toronto at Mississauga have had discussions for some years regarding potential expansion of the MD program at UTM. In the spring of 2005, the Government of Ontario, in response to the shortage of primary care and generalist physicians, included in its budget a commitment to expand medical student enrolment by 104 positions per annum.

On February 9, 2006, the Ministry of Training, Colleges and Universities and the Ministry of Health and Long-Term Care announced a plan for many of the 104 new positions to be sited at satellite, community-focused campuses operated by three of Ontario's medical schools, as follows:

- Mississauga: 26 spaces (University of Toronto)
- Waterloo Region and St. Catharines: 38 spaces combined (McMaster University)
- Windsor: 14 spaces (University of Western Ontario)

The University of Toronto Undergraduate Medical Education (UME) program's 26-student expansion will take place incrementally over three years, producing a total first-year intake of 224 by September 2007:

- Current year 2005/06 6 additional students for a total of 204
- 2006/07 14 additional students for a total of 218
- 2007/08 6 additional students for a total of 224

Under the University of Toronto Faculty of Medicine's proposal, approved by Governing Council in early 2006, the Mississauga expansion of the UME will be operated under the "Academy" model that has long been successfully employed for all students at the downtown fully-affiliated teaching hospitals.[1] The new Mississauga Academy will focus on enhancing students' exposure to generalist practice (family and community medicine, general surgery, general internal medicine, general psychiatry, general pædiatrics, and general obstetrics/gynæcology) throughout the MD program.

The Mississauga Academy will have an enrolment of 36 students per year, comprised of the expansion number of 26 and an additional 10 students who will be reallocated from the existing Academies. The figure of 36 students was deemed to be the lowest viable number for an

[1] The three existing Academies are the FitzGerald Academy, located at St. Michael's Hospital, the Peters-Boyd Academy, a joint partnership of Sunnybrook Hospital and Women's College Hospital, and the Wightman-Berris Academy, at Mount Sinai Hospital, UHN-General Division, and UHN-Western Division.

Academy, in view of the teaching model employed in the current UME program and the critical number appropriate for an excellent student experience (on par with the other Academies).

Student entry to the Mississauga Academy is planned to begin in the 2007/08 academic year with the first group of 36 students. The program will build over the subsequent three years so that all four years will be represented in Mississauga by 2010/11, as illustrated in Table 1. Thus, a total of 144 students will be designated to the Mississauga Academy once fully implemented.

Table 1. Roll-out of Undergraduate Students to Mississauga Academy.

	2007/08	**2008/09**	**2009/10**	**2010/11**
UG 1	36	36	36	36
UG 2		36	36	36
UG 3			36	36
UG 4				36
Total UG	**36**	**72**	**108**	**144**

Project Committee

Following the Government's formal announcement of the expansion in February 2006, a Project Planning Committee was established with the primary responsibility of developing a space plan to accommodate the increased number of medical students at the university. The higher enrolment and associated creation of the Mississauga Academy has implications for space, facilities, and infrastructure enhancements at:

- the Medical Sciences Building on the St. George campus,
- the University of Toronto at Mississauga (UTM) campus, and
- the proposed partner hospital sites, Credit Valley Hospital (CVH) and Trillium Health Centre (THC).

Space and Facilities Implications for the Medical Sciences Building (MSB)

The increased number of medical students requires expansion of the anatomy teaching laboratories and other teaching space in the MSB, while the distributed model of UME will rely on videoconferencing and web-casting of lectures and seminars between the UTM and St. George campuses; this will necessitate facility and audio visual and information technology improvements of lecture theatres and other seminar rooms in the MSB.

<u>Anatomy Laboratories in MSB</u>

The first segment of the medical school curriculum, specifically the first ten weeks of the Structure and Function course, will be entirely delivered in the MSB on the St. George campus for all students This is due to the specialized resources required for gross anatomy instruction. Similarly, six sessions of neuroanatomy laboratory teaching over approximately four weeks will also be conducted centrally on the St. George campus for all students. The creation of a new anatomy laboratory and an additional seminar room within the existing anatomy teaching laboratory complex are required to accommodate the increased number of students. The added capacity is required for the 2006/07 academic year due to the incremental expansion of the medical student population.

Lecture Theatres in MSB

The planned videoconferencing of lectures between the MSB and UTM for all courses in the first two years of the medical school curriculum will necessitate facility enhancements to the two key lecture theatres in the MSB (rooms 3153 and 3154) to incorporate the videoconferencing technology and associated infrastructure. Similarly, upgrades to seminar/small group learning rooms have been identified as a potential future project to be undertaken by the Faculty of Medicine.

Relocation and Improvements to Computing Facilities in MSB

Extensive use of information technology in support of the new Academy, in particular videoconferencing to permit remote delivery of lectures, will necessitate improvements to the Faculty of Medicine's Academic Computing facilities. Current plans call for a consolidation of staffing and operations with Administrative Computing into a new *Discovery Commons* within space currently occupied, for the most part, by Academic Computing on the third floor of the MSB. This new centre of computing would house, among other features, a video control room for monitoring of videoconferencing activities, a dedicated videoconferencing studio, a server room, a Help Desk, and staff offices. Associated AV equipment transfer rooms will be located throughout the MSB.

Space and Facilities Implications for UTM

The establishment of a medical school Academy on the UTM campus will require a number of facilities, and information technology enhancements to accommodate both teaching and student service space for the medical curriculum and future research space for three new faculty positions that will be created in conjunction with the Mississauga Academy. The necessary teaching space includes lecture rooms, seminar rooms, small-group teaching space, and associated administrative support space.

Current utilization of UTM classrooms already exceeds the Council of Ontario Universities (COU)-recommended utilization, therefore new teaching space must be created to accommodate not only the delivery of the medical school curriculum but also capacity-specific UTM classroom shortages. Student services will be provided in enhanced spaces that are being planned for UTM.

Project Approvals

The proposal entitled *Undergraduate Medicine (MD) Enrolment Expansion: Proposal to create a new Academy based at The University of Toronto at Mississauga (UTM) in partnership with the Mississauga community-affiliated hospitals* has been approved by the following Committees:

Faculty Council, Faculty of Medicine	December 12, 2005
Erindale College Council	December 15, 2005
University of Toronto Academic Board	February 16, 2006
University of Toronto Governing Council	March 23, 2006

On February 9, 2006, the Ministry of Training, Colleges and Universities and the Ministry of Health and Long-Term Care announced the medical student enrolment expansion to the Mississauga community and other provincial sites.

The Mississauga Academy will require accreditation approval by the Liaison Committee on Medical Education (LCME) of the Association of American Medical Colleges (AAMC) and the Committee on Accreditation of Canadian Medical Schools (CACMS) of the Association of Faculties of Medicine of Canada (AFMC). This accreditation is required for any new sites for delivery of medical curriculum. As per LCME and CACMS requirements, a letter advising the two bodies fo the planned expansion and new teaching sites was submitted by the Vice-Dean of Undergraduate Medical Education, Dr. Jay Rosenfield, on September 1, 2006. Site visits are expected in November, 2006 and possibly again in the spring of 2007.

IV. Statement of Academic Plan

Undergraduate medical education at the Faculty of Medicine, University of Toronto, is a four-year program divided into two phases: the first and second years comprise the "Preclerkship," while the third and fourth years are the "Clerkship." In 2004, the UME program was accredited for eight years following an extensive joint review by the AFMC Committee on Accreditation of Canadian Medical Schools (CACMS) and the AAMC/AMA Liaison Committee on Medical Education (LCME).

The Faculty of Medicine currently delivers its undergraduate medical curriculum in partnership with three Academies that are sited at fully affiliated teaching hospitals in Toronto. The Mississauga Academy will be the fourth Academy and will include both a campus-based venue at UTM for the more didactic parts of the curriculum and hospital sites for the clinically focused elements of the curriculum. The UME curriculum at all four Academies will be equivalent and is determined centrally by the Faculty of Medicine.

The Medical Academy provides an opportunity to increase health science related teaching and research on the UTM campus.

Delivery of the Preclerkship Curriculum

The faculty at UTM and the community-affiliated hospitals will work in partnership with the UME Preclerkship course directors to deliver the curriculum. Current faculty and new recruits from the UTM Departments of Biology, Chemistry and Physical Sciences, and Psychology are expected to complement the existing pool of Preclerkship instructors. In addition, new clinical faculty will be recruited from the physicians on staff at the two community-affiliated hospitals in Mississauga, Credit Valley Hospital and Trillium Health Centre.

Using advanced information technology, all students will be linked by videoconference to enable distributed learning across the campus sites. The Faculty has explored in detail the distributed campus model in British Columbia[2] and the Northern Ontario School of Medicine.

[2] Expanding undergraduate medical education in British Columbia: a distributed campus model; CMAJ, 173(6), Sept 13, 2005.

The curriculum to be delivered at the UTM campus will consist predominantly of lectures, other large-group sessions, and seminars, as well as select clinical skills teaching for the various Preclerkship courses:

Structure and Function
Metabolism and Nutrition
Brain and Behaviour
Pathobiology of Disease
Foundations of Medical Practice
Determinants of Community Health (DOCH) I
Determinants of Community Health (DOCH) II
Art and Science of Clinical Medicine (ASCM) I
Art and Science of Clinical Medicine (ASCM) II

Large Group Lectures

Lectures are held for the entire group of students, and occupy approximately 10 to 15 hours each week in both first and second year. In the first 10 weeks of Structure and Function and on neuroanatomy teaching days in Brain and Behaviour, all students will attend lectures in the Medical Sciences Building on the St. George campus; during the remainder of the Preclerkship, Mississauga Academy students will attend lectures at UTM. For each lecture, it is expected that one lecturer will address the entire class from his or her choice of site (principally at St. George), with videoconferencing connecting the remote site.

Seminars

These sessions follow a fixed curriculum and are typically case-based and interactive; there is one seminar leader per group and generally one to two two-hour seminars per week, although courses vary. At the Mississauga Academy, seminar groups will consist of 18 students each. Some seminars in Mississauga will be sited on the UTM campus with seminar leaders who are faculty of UTM or clinician faculty from the hospitals. Other seminars will take place in the hospital setting. Flexibility in site location is required to minimize travel between sites for both students and faculty.

Clinical Skills/Bedside Teaching

This format of learning occurs principally at the hospitals during the Art and Science of Clinical Medicine courses (ASCM I and ASCM II); however, the UTM campus will also support student learning in these courses, providing adaptable facilities for student practice. The UTM campus will also provide a site for the Objective Structured Clinical Examinations (OSCEs), a series of examinations throughout the first and second years of the ASCM curriculum. OSCEs are also part of the student evaluation for several clinical rotations in Clerkship (Years 3 and 4).

Delivery of the Clerkship Curriculum

The Clerkship component of the undergraduate curriculum is primarily focused on clinical training. With the exception of DOCH III and DOCH IV, the Clerkship courses are conducted almost exclusively at clinical sites. The UTM campus will provide teaching space for the seminars and large group lectures/tutorials that are part of the clinical rotations and DOCH III and IV.

Overall, the Mississauga Academy presents a valuable opportunity for the Faculty of Medicine to provide a more community-based and community-oriented undergraduate curriculum. Students will be able to receive almost all of their instruction in Mississauga, either at the UTM campus, the community-affiliated hospitals, or in the greater community, with the exception of hands-on anatomy teaching in the Preclerkship, which must be provided at the MSB.

V. Space Program

A. Nominal Space Requirements

A working sub-group of the Project Planning Committee has devoted considerable time and effort to develop a comprehensive space program for the new Academy that can accommodate the current UME curriculum. The space program identifies all of the spaces that will be required at UTM, in the MSB, and at the two community hospitals.

Typically, space requirements are calculated using the Council of Ontario Universities and University of Toronto space standards for undergraduate classrooms, teaching and research laboratories, academic and administrative office space, student service space, etc. These calculations are based on various input measures, such as full-time student enrolments (both undergraduate and graduate students), weekly student contact hours, and faculty and staff counts.

COU space standards, University of Toronto practices, the specialized nature of the UME curriculum, UME accreditation requirements, and the unique circumstances surrounding a distributed cohort at UTM were considered in developing the space requirements for the new Academy.

Anatomy Teaching Facilities

An important portion of the UME first-year Preclerkship curriculum involves the use of anatomy dissection laboratories. In 2005/06 seven laboratories accommodate not only the first-year UME class (204 students[3]) and repeating MD students (2 reserved spots) but also students from graduate programs in Biomedical Communications (10 students) and Anthropology (5 students). Each of the existing dissection laboratories had a student capacity of 32 students for a total capacity of 224 students; the 2005/06 enrolments of each of these programs were thus readily accommodated.

With the UME enrolment increasing to 218 in 2006/07, and to 224 students by the start of the 2007/08 academic year (as well as the continued inclusion of the 17 other MD and graduate students), another anatomy dissection laboratory will be required. As noted earlier, the delivery of any practical anatomy instruction at UTM is not feasible due to resource implications.

Also, anatomy instructors and students have access to three small group teaching rooms; these existing rooms are considered to be inadequate in size and not capable of accommodating the planned enrolment expansion. A fourth small group teaching room will therefore be needed.

Locations for the proposed new anatomy dissection laboratory and small group teaching room were identified earlier this year, and the design of these rooms was completed by the University's Design Office. The small group teaching room is now complete, and construction on the new laboratory will be completed in October of this year.

[3] The figure 204 includes the first stage of the enrolment expansion. Prior to 2005/06, the class size had been 198.

Lecture Theatres, Classrooms, and Seminar Rooms

The two-year Preclerkship phase of the UME program involves a mix of formal large-group instruction (usually delivered to the entire year class at once) and small-group instruction such as seminars and problem-based learning (PBL) sessions. These scheduled activities currently involve a range of existing MSB facilities, including two large tiered lecture theatres (264- and 288-seat capacities respectively), several smaller lecture rooms (both OSM and departmental), and a number of wet teaching laboratories (which are employed by UME exclusively for the delivery of concurrent seminars in the absence of a large number of more suitable contiguous seminar facilities in the MSB), mostly for the delivery of concurrent seminars rather than conducting experiments).

With the inclusion of the necessary videoconferencing and IT equipment and infrastructure, and related architectural, mechanical/electrical, and furniture/furnishings renovations, the existing large lecture theatres (rooms 3153 and 3154) will be made suitable for the UME expansion and new Academy at UTM.

UTM has undertaken a detailed examination of the timetables of its existing classroom inventory to determine if all or part of the Academy's instructional requirements could be accommodated. However, it was determined that the Academy's instructional needs could not be satisfied within the existing UTM classroom pool. Therefore, additional classroom space will be required at UTM not only for the Academy's curriculum but also for UTM instruction.

For the UTM Academy cluster, the building program includes two 60-seat lecture rooms that will be scheduled and used in parallel with the two large MSB lecture theatres on the St. George Campus. These two rooms will be equipped with AV/IT equipment and infrastructure similar to that in their MSB counterparts.

As well, both the UME program and other departments at UTM would benefit from additional 30-seat and 20-seat classrooms. The 30- and 20-seat classrooms, along with the 60-seat theatres, will be located along public corridors within the former library space to make them readily accessible to both UME and other UTM programs. The 12-seat PBL/seminar rooms will be located within the Academy's discrete space cluster.

The number of classrooms and seminar rooms is largely dependent on not only meeting formal instruction needs, but also taking into consideration informal usage by students and staff. Moreover, the proposed rooms can serve as replacement space for those facilities that are planned for the hospitals in the event of an emergency (such as the recent SARS crisis, which severely limited access to hospitals and disrupted delivery of UME curriculum).

The lecture theatres and classrooms will need to be situated in a central location that will allow them to be readily accessed by students in the Academy and in UTM's academic programs.

Other Instructional Facilities

An important aspect of the UME program involves formal instruction with professional "standardized patients" and informal clinical skills practice by students on their classmates. A request for a suite of patient simulation rooms, that duplicate a physician's examination room, along with a central observation room and support facilities, has been submitted to each of the community-based hospitals. Similar facilities are employed at the Toronto General Hospital's

Helliwell Centre (Wightman-Berris Academy) and other medical schools, including the University of Western Ontario.

Until these clinical skills facilities are made available at the hospitals, and for emergency scheduling and testing purposes, the PBL/seminar rooms at UTM will be furnished with portable examination tables and diagnostic equipment.

Teleconferencing and IT Facilities

Crucial to the establishment of the Mississauga Academy will be the AV/IT network connections between the two campuses and throughout facilities at both campuses. This infrastructure and the technology in each room will require the development of a core of AV/IT facilities, as well as the rationalization of existing computer service operations at both MSB and UTM. The core AV/IT facilities at both campuses will be the video control rooms and videoconferencing studios.

Academy Office and Student Facilities

The Faculty of Medicine has identified the academic and administrative support that will be required to meet the needs of the new Medical Academy at UTM. The majority of these offices and student areas will be accommodated within new space that will be constructed or renovated for the Academy. However, some of the Academy's requirements will be addressed with existing or new UTM facilities (such as space within the new Academic Learning Centre, the renovated Council Chamber, and the proposed *Student Services Plaza*).

Hospital-Based Facilities

As well as extensive campus-based teaching, the UME program involves significant hospital-based instruction and experience. The Faculty of Medicine has submitted to the two Mississauga hospitals a list of rooms that the new Academy will require for consideration in their respective capital projects.

Summary of Total Space Requirements for Mississauga Academy

The working sub-group has determined that the new Mississauga Academy will require 1,091 net assignable square metres (nasm) of existing space renovated in the Medical Sciences Building and a total of 2,323 nasm of programmable space within new construction and renovated space on the UTM campus..

Table 2. Total Space Requirements for Mississauga Academy at MSB and UTM.

	Nominal nasm	**Comments**
MSB		
Anatomy Lab/Seminar Room	138	AFD project fall 2006
Lecture Theatres	684	Upgrading of existing lecture theatres
Computing Services	269	Renovation of 3rd floor spaces
Subtotal MSB	*1,091*	
UTM		
Classroom Facilities	630	Shared, new construction and renovation
Mississauga Academy Cluster	592	Dedicated new construction and renovation
Research Labs/Faculty Offices	333	New construction
Council Chamber/Ante Room	267	Upgrading of existing Council Chamber, shared

Student Affairs Offices/Testing	23	Renovation of Student Services Plaza, shared
ALC Office/Study Spaces	41	Allocation within ALC
Computing Services/Video Studio	437	Renovation of existing space
Subtotal UTM	*2,323*	
TOTAL	3,414	

B. Implementation of Space Program

Overview

The Project Planning Committee has concluded that the space program for the new Mississauga Academy at UTM should involve both new construction and renovation of existing building space. New construction will include a two-storey addition to the west side of the South Building's former library block and a future addition possibly to the north end of the north wing of the South Building. Renovations will be undertaken on all three floor levels of the South Building's west block in floor areas that will be vacated by UTM's library in the fall of 2006.

The Committee determined that the St. George campus portion of the Academy space program can be accommodated through the renovation of existing facilities in the Medical Sciences Building.

Although the UME enrolment expansion to 224 students will be realized with the start of the 2007/2008 academic year, the extent of new construction and renovations at both campuses, and the introduction of new state-of-the-art videoconferencing systems, would make it extremely difficult for the capital project to proceed through University governance (for approval) and the design/tender/construction process and be completed on time, even with an aggressive project schedule. A more realistic completion date for the Academy's entire space program at both campus locations is the start of the 2008/2009 academic year.

In order for the Faculty of Medicine to ensure that the new Academy can commence its activities at UTM and the Mississauga hospitals by the start of the 2007/2008 academic year, an interim space plan has been developed to temporarily accommodate essential first year instructional requirements and core staff and services within library space that will be vacated later this fall. The areas designated for temporary assignment to the Academy will not be required to satisfy the full space program. The construction of the new addition and the completion of needed renovations can proceed without disruption to the Academy's interim accommodations and be ready for the start of the 2008/2009 academic year.

The renovations within the MSB will be phased in with the added anatomy facilities becoming available in October 2006, the first-year lecture theatre and associated videoconferencing/IT facilities and infrastructure by 2007/2008, and the remaining facilities by 2008/2009.

Existing Space

<u>Medical Sciences Building</u>

Currently, the UME program utilizes a significant amount of facilities within the Medical Sciences Building. These facilities include, but are not limited to, anatomy dissection laboratories and small group teaching rooms, wet teaching laboratories (as seminar rooms), Academic Computing computer laboratories, large tiered-lecture theatres, and other classrooms and laboratories.

The anticipated UME enrolment expansion necessitates additional anatomy teaching facilities while the remaining facilities are adequate in capacity and numbers (if not quality). All necessary renovations that are required will take place in either existing Medicine or Office of Space Management (OSM) facilities.

University of Toronto at Mississauga

Much of the west wing of the UTM South Building was built in 1971 to accommodate its then-current library operations. It is centrally located with access directly adjacent to the "Meeting Place" on the main level (second floor) and the primary administrative spaces on the upper level (third floor).

In 2005, a new library building for the Mississauga Campus was approved and is currently under construction and scheduled to be occupied in the fall of 2006. The move of library functions from their current location provides an opportunity to develop facilities for the Mississauga Academy and to give UTM additional facilities for academic, administrative and student services functions.

A feasibility study conducted by Campus and Facilities Planning early in 2006 produced several recommendations or guiding principles that would help accomplish an appropriate plan for future occupancy of the library space. The following recommendations were presented:

1. Open up the perimeter spaces for public functions to provide access to light into the core of the wing and allow views to surrounding areas.

2. Maximize adjacencies of use through the consideration of horizontal functionality and programming.

3. Work within the existing infrastructure of mechanical and structural systems.

4. Consider all spaces in the library wing, including those not serving library functions, when planning and programming the future use of the South Building west wing.

5. Introduce additional non-assignable space in the form of corridors to form a useable grid of spaces to accommodate academic facilities.

A detailed report is presented in Appendix D.

Interim Space Plan for 2007/2008

As noted above, the Academy's full space program cannot be entirely implemented by the start of the 2007/2008 academic year. Consequently, an interim space program for UTM has been created based on the carefully identified requirements that will be needed to support the first class in 2007/08. Permanent Academy space will then be completed in time for the 2008/09 academic year.

The interim space program provides for the UTM-based teaching, videoconferencing/IT, administrative, and student/social activities of the Academy in its first year, and is designed to minimize the amount of temporary construction that will later be removed for UTM's space development program.

Most of the interim space will be located in the vacated library area of the South Building, adjacent to the future Academy site. In keeping with the first-year curriculum, the interim program provides for the following teaching spaces: one lecture theatre, two classrooms, three PBL/seminar rooms, and six clinical-skills rooms. For student use in the first year, a small lounge and study room, as well as a locker bay, are planned. Temporary office space for the new Academy Director, visiting faculty, and staff is also included in the interim program. Finally,

the dedicated videoconferencing and associated IT space will be constructed in its permanent location by the fall of 2007 to reduce duplication of costs.

The lecture theatre need will be met by scheduling classes into UTM's Council Chamber (currently under renovations) and similarly, one of the classroom requirements will be satisfied through the allocation of the Committee Room that is adjacent to the Council Chamber. The need for clinical-skills rooms will be met by scheduling these activities into existing seminar rooms and small classrooms that will be furnished with mobile examination tables.

Despite its interim nature, the Academy space in 2007/08 is intended to provide a distinctive face to the medical school at UTM. A significant entrance leading directly from the *Meeting Place* will welcome visitors, students and staff. A secondary entrance from the outside (*Inner Circle*) will also be available to provide independent access after hours. Most of the rooms will be contiguous and linked internally between floors through an existing central stairway.[4] Students, faculty, and staff will thereby experience a cohesive medical school environment, while observing the ongoing construction of the permanent space of the Mississauga Academy.

A proposed layout for the Academy's interim facilities on the second floor of the South Building is presented in Appendix A.

Table 3. Summary of Interim Space Requirements for 2007/2008.

	Nominal nasm	**Comments**
MSB		
Anatomy Lab/Seminar Room	138	AFD project summer 2006
Lecture Theatres	383	Upgrading of existing lecture theatres
Computing Services	269	Reallocation of 2nd and 3rd floor spaces
Subtotal MSB	*790*	
UTM		
Classroom Facilities	111	Temporary new classrooms in existing library
Mississauga Academy Cluster	274	Temporary renovation in existing library
Research Labs/Faculty Offices	0	
Council Chamber/Ante Room	267	Upgrading of existing Council Chamber
Student Affairs Offices/Testing	23	Renovation in existing library
ALC Office/Study Spaces	41	Allocation within ALC
Computing Services/Video Studio	437	Renovation of existing space
Subtotal UTM	*1,153*	
TOTAL	1,943	

Permanent Facilities

A brief discussion of the Mississauga Academy's space program was presented in the preceding section on *Nominal Space Requirements*. The following tables provide a more detailed list of rooms by type, size, and number that are needed at both campus locations. Detailed room specification sheets for each room type are available on request.

[4] The principal exception will be the lecture theatre, which will be housed in the UTM Council Chambers, on the third floor of the South Building.

Table 4. Mississauga Academy – Space Program by Location

Room Description	nasm Per Room	No. Rooms	nasm Allocation
St. George Campus – Medical Sciences Building (Existing Facilities)			
Lecture Theatre – 1st-Year (264-seat; room 3153)	382.6	1	382.6
Lecture Theatre – 2nd-Year (288-seat; room 3154)	301.3	1	301.3
Anatomy Dissection Laboratory (32-stn)	94.7	1	94.7
Small Group Teaching Room (32-seat)	43.6	1	43.6
Academic Computing Staff Offices	120.0	1	120.0
Videoconferencing Studio	50.0	1	50.0
Video Control Room	50.0	1	50.0
Helpdesk	9.0	1	9.0
IT Workshop	13.0	1	13.0
AV Equipment Transfer Facility	9.0	3	27.0
St. George Campus Total (nasm)		**12**	**1,091.2**
University of Toronto at Mississauga (New construction and Existing Facilities)			
A. Instructional Facilities - Shared			
Lecture Theatres (60-seat)	116.2	2	232.4
Classrooms (30-seat)	66.9	4	267.6
Classrooms (20-seat)	49.1	2	98.2
Classroom Storage A	3.7	6	22.2
Classroom Storage B	3.3	3	9.9
UTM – Instructional Facilities Sub-total		**15**	**630.3**
B. Within Mississauga Academy Cluster			
PBL/Seminar Rooms (12-seat)	23.4	12	280.8
Office – Academy Director	19.0	1	19.0
Office – Site Director DOCH	13.0	1	13.0
Visiting Faculty Offices (Shared)	11.0	3	33.0
Office – Executive Assistant to Academy Director	13.0	1	13.0
Office – UME Curriculum Coordinator	13.0	1	13.0
Offices – UME Administrative Support Staff	13.0	4	52.0
Office Support (copier, supplies, etc.)	10.0	1	10.0
Records & Archives Room	13.0	1	13.0
Mail Room (Faculty & Staff)	5.0	1	5.0
Lounge/Kitchenette (Faculty & Staff)	16.7	1	16.7
Reception/Waiting Area	15.0	1	15.0
Office – Medical Society (Storage)	11.0	1	11.0
Student Lounge (25-seat)	50.0	1	50.0
Mail Room (Students)	6.5	1	6.5
Student Locker Room	41.2	1	41.2
UTM - Academy Cluster Sub-total		**34**	**592.3**

Table 4, continued

Room Description	Nasm Per Room	No. Rooms	Nasm Allocation
C. Outside of Mississauga Academy Cluster			
C1. Research Laboratory Addition (Future)			
Research Laboratories	70.0	3	210.0
Research Support Rooms (40% of lab nasm)			84.0
Faculty Offices (Private)	13.0	3	39.0
Research Laboratory Addition Sub-total		**6**	**333.0**
C2. Existing & Future UTM Shared Allocations			
UTM Council Chamber (room 3130)	214.0	1	214.0
UTM Council Chamber – Committee Room (room 3129)	53.0	1	53.0
Office – Student Affairs Coordinator	11.0	1	11.0
Testing Facility for Students Requiring Accommodations	12.0	1	12.0
Office – Library Information Specialist (within ALC)	11.0	1	11.0
Student Study/Resource Area (within ALC)	30.0	1	30.0
UTM Shared Allocations Sub-total		**6**	**331.0**
C3. UTM Computer Services Cluster			
Videoconferencing Studio	50.0	1	50.0
Video Control Room	50.0	1	50.0
UTM Computing Services Staff Area	200.0	1	200.0
Server Room	50.0	1	50.0
IT Office – Chief Information Officer	18.0	1	18.0
IT Workshop	13.0	1	13.0
Helpdesk	9.0	1	9.0
IT Storage Room	20.0	1	20.0
AV Equipment Transfer Facility	9.0	3	27.0
UTM Computer Services Cluster		**11**	**437.0**
UTM - Outside Academy Cluster Total		**23**	**1,101.0**
UTM Campus Total (nasm)		**72**	**2,323.5**
Grand Total Both Campuses (Existing Facilities and New Construction)		**84**	**3,414.7**

VI. Special Considerations

Campus Planning Issues

University of Toronto at Mississauga

The new Mississauga Academy will require two additions on the UTM campus: a two-storey addition at the west end of the South Building and a future smaller four-storey addition for research laboratories to possibly be located at the north end of the South Building. Both additions will provide opportunities to create improved pedestrian flow, enhance the open space environment, and introduce the first phase of much needed research facility expansion that has been identified in UTM's Master Plan.

The primary Academy cluster in the South Building will replace the central presence that the library had provided in this area of the campus, both physically and programmatically. The new structure will complete the courtyard already framed by the Kaneff Centre and portions of the South Building. This addition will enable a new entrance to link the existing pedestrian walkway between the two buildings with the "Meeting Place" in the South Building and the new Wellness Centre through a central activity spine.

The space that will be vacated with the relocation of the library to the Hazel McCallion Learning Centre will accommodate the Mississauga Academy and also provide UTM with the opportunity to create a new Student Services Plaza (a consolidation of existing services) as well as allowing for an increase of necessary central administrative and academic office facilities for UTM. The proposed Student Services Plaza may also incorporate the reorganization and renovation of the Meeting Place and adjacent facilities. UTM will be submitting to Governance its project planning report on the proposed use of its portion of the two-storey addition and the vacated library space.

The future addition for research laboratories that is under consideration for the north end will be in proximity to the existing research facilities of the South Building and should be designed to facilitate the planned development of a new science wing. As well, this new addition must be sited to ensure that the function of the CCIT Building is not compromised.

Appendix A includes location floor plans for UTM and MSB that identifies all the facility development sites for the Mississauga Academy.

Inter-Campus AV Infrastructure

A critical element in the establishment of the new Mississauga Academy is the development of an effective infrastructure that will link key UME instructional facilities at UTM with their counterparts in the Medical Sciences Building via videoconferencing. Notably, UME in the new distributed model will involve simultaneous instruction at both locations and it is essential for quality of education and successful accreditation that students have the same learning experience regardless of where they attend class. This includes not only the ability to view a lecture, but also to interact with both the instructor and their fellow students in the course of a session.

The end points of the interconnecting telecommunications will be the video control rooms at both campuses. From these rooms, audio-video and data will be streamed not only between campuses and also between the individual facilities within each campus location. The two large lecture theatres (rooms 3153 and 3154) within the Medical Sciences Building, the two new 60-seat lecture theatres at UTM, and the videoconferencing studios

(one each per campus) will be fully videoconferencing-capable. A mobile videoconferencing cart will enable videoconferences to take place in other rooms within each building as well, as required. Furthermore, two office videoconferencing units (doubling as computer monitors) at each site will permit more private remote meetings between faculty, staff, and/or students as required.

Essential equipment requirements have been identified for each Academy room at both campuses and room-by-room lists are provided in Appendix C.

Secondary Effects

Medical Sciences Building

There are two secondary effects associated with the renovations proposed for the Medical Sciences Building. To complete the renovations to at least one of the large lecture theatres (rooms 3153) in time for the start of 2007/08, it will be necessary to begin work as soon as possible. The Faculty of Medicine, together with the Office of Space Management will relocate scheduled classes to release room 3153 to contractors as early as possible (winter session of 2006/07).

The other secondary effect will involve the development of the existing Faculty of Medicine's Academic Computing space into the new *Discovery Commons*. It is anticipated that some staff from of Academic Computing and operations will need temporary accommodations while the *Discovery Commons* in under construction. The essential element in the development of the *Discovery Commons* is the requirement that the permanent videoconferencing facilities and student computer rooms are available by the start of the 2007/2008 academic year. Every effort will be made to minimize disruption to adjacent activities during the period of construction.

University of Toronto at Mississauga

The renovations that will be completed to accommodate the new Academy will present an opportunity for UTM to develop the remaining library space for its own purposes. The Mississauga Academy will require approximately a quarter of the space vacated by the library on the second and third floors of the South Building and its program will be located at the west end of the block.

UTM has proposed that the available space in the former library and the new addition be converted to become academic space for the Departments of Geography and Sociology, an administrative office cluster for a new Dean (third floor), and the consolidation of existing student-related operations into a new *Student Services Plaza*.

It is critical that the design and renovation of UTM's space program within the vacated library (and its portion of the new two-storey addition) occur in parallel with the design and implementation of the new Medical Academy. Ideally, the same consultants should be used for these renovations as will be retained for the Mississauga Academy cluster. In order to realize this goal, UTM will submit for approval a space program and master plan for the remaining portion of the vacated library space in the South Building. This project planning report is expected to be submitted for governance approval later this fall.

The construction of the new addition and renovations to the South Building will affect the occupants and users of the Kaneff Centre, the CCT, and adjacent areas of the South

Building because of the proximity of the construction site. Every effort will be made to minimize disruption to adjacent activities during the period of construction.

A suite of Sociology facilities on the first floor of the South Building will also be vacated in order to permit the construction of the new videoconferencing and IT space. Renovation in this area will also allow for the consolidation, rationalization and relocation of UTM's Computer Services' staff and operations.

Renovations to UTM's Council Chamber and the adjacent Committee Room began in the summer to create lecture space that will be shared by UTM and the Medical Academy.

Interim Accommodation for the Mississauga Academy

University of Toronto at Mississauga

In order to commence instruction to UME students at UTM by the start of the 2007/2008 academic year, interim accommodations for the activities of the first-year class will be required.

A number of planning assumptions were made: interim accommodations will be developed in vacated library space not needed to satisfy the Academy's final space program, interim renovations should be kept to a minimum, and interim accommodations should not be developed for those facilities or functions that will be difficult or inadvisable to relocate (e.g. videoconferencing facilities) or can be temporarily accommodated elsewhere at UTM.

UTM will make available the renovated Council Chamber and Committee Room as the Academy's first-year 60-seat lecture theatre and one of its 30-seat classrooms. The UME program coordinator has determined that existing small seminar rooms would be available to conduct small group sessions such as problem-based learning tutorials and clinical skills tutorials, with portable equipment and furnishings brought into the rooms as needed; this space requirement will therefore not need to be developed in the Academy's interim plan.

The area to the east and south of the library's central staircase on the main floor can be readily developed to accommodate the Academy's remaining instructional facilities, administrative and academic offices, support rooms, and student study and amenity spaces. This area can have its main entrance either off the existing central *Meeting Place* or the existing exterior doors on the south side. It is likely that an emergency exit from this floor area will be required and an exit corridor has been included in the interim floor plan.

It is recommended that the proposed video control room and videoconferencing studio be developed in concert with the existing videoconferencing and IT facilities at UTM (including Computing Services staff and operations); this AV/IT suite of rooms should be planned, designed, and constructed in its final location. The area vacated by the library on the first floor will not be sufficient and adjacent space assigned to Sociology will need to be released.

Medical Science Building

Although an interim space plan is not proposed for the Medical Sciences Building, as previously noted, the development of the new Discovery Commons on the third floor may require the occasional use of swing space during construction.

VII. Resource Implications

The Capital Projects Department has prepared a Total Project Cost estimate using construction cost estimates prepared by the firm of A W Hooker & Associates.

The work falls into three projects which are described in more detail below.

Medical Sciences Building

The renovation work within MSB directly related to the enrolment expansion and creation of a new Academy impacts approximately 1,434 nasm, by renovations to an anatomy laboratory and small teaching room, the creation of a new Discovery Commons complex, and major renovations to the two large lecture theatres to bring them more in line with today's standards. Asbestos abatement will be carried out in the affected areas.

The estimated total project cost is $6.558 million, which includes an AV and IT component of $2.200 million (including soft costs). The cost of *the Discovery Commons* will be shared equally with the Faulty of Medicine and this capital project; Medicine will contribute $1.250 million. Medicine's contribution brings the Academy's net cost to $5.308 million.

See Table 1 in Appendix B for further details of the Academic Computing and lecture theatre renovation costs.

UTM First Phase

An already approved capital project to renovate the existing Council Chamber and Committee Room is being implemented to create teaching space. The total cost of this aspect of the Medical Academy is $612k. The use and cost of the teaching space will be shared equally between UTM and the Academy.

Minor renovations of approximately 390 nasm of vacated space in the old library administration area on the second floor will accommodate the Mississauga Academy administration, classrooms and student space for the 2007/2008 year. In addition, a new computing administration and videoconferencing cluster of 440 nasm will be created in renovated space on the first floor, all to be ready for September 2007. The total project cost of these renovations are estimated to be $2.45M. UTM will contribute approximately $1M making the net cost to the Academy $1.45M.

Permanent space for the Medical Academy will be located in renovated space vacated by the library and a new storey addition on the west end of the South Building. Approximately 690 nasm of renovated space will be assigned to the Medical Academy, making the balance of the vacated space (approximately 2,200 nasm) available to UTM to address their space needs. The new two storey addition will provide approximately 530 nasm of necessary program space for the Medical Academy. The addition can also include space required by UTM for academic and administrative activities. An approximate order of magnitude cost has been estimated to be $1.9M which will be funded by UTM. The details of these requirements and necessary funding will be the subject of a separate planning report on the UTM South Building Master Plan which will be submitted for approval at a later date.

The total project cost for the Mississauga Academy portion is estimated to be $11.799 M.

UTM Future Phases of Capital Construction

Future phases of construction will accommodate three new research laboratories at UTM. The Mississauga Academy project will set aside $3M as its contribution towards these facilities with UTM supporting the balance, if required. Details of this project will be the subject of a later submission.

The UTM space program for the remainder of the vacated library space has not yet been finalized, but it is critical that all detailed design work be done simultaneously to achieve the most appropriate solutions and to minimize disruption to the activities of the Academy. The cost of renovating the remaining space in the vacated library for other UTM purposes would be in the range of $7.5M. A separate project planning report will be submitted for consideration of this project.

Summary of Estimated Total Project Costs

	Mississauga Academy	Faculty of Medicine	UTM	Total
Medical Sciences Building				
Anatomy Lab Upgrades	$452,000	$0	$0	$452,000
Lecture Theatre Renovations	$3,606,000	$0	$0	$3,606,000
Discovery Commons	$1,250,000	$1,250,000	$0	$2,500,000
Total MSB	**$5,308,000**	**$1,250,000**	**$0**	**$6,558,000**
UTM First Phase				
Council Chamber Renovations	$312,000	$0	$312,000	$624.000
Interim Renovations for Academy	$443,250	$0	$0	$443,250
Videoconferencing/IT Cluster	$1,006,950	$0	$1,006,950	$2,013,900
New Addition	$6,831,000	$0	$1,919,000	$8,750,000
Renovations for Academy	$3,205,850	$0	$0	$3,205,850
Design Fees; Other UTM Activities in South Building	$0	$0	$450,000	$450,000
Total UTM First Phase	**$11,799,050**	**$0**	**$3,687,950**	**$15,487,000**
Total for MSB & UTM First Phase	**$17,107,050**	**$1,250,000**	**$3,687,950**	**$22,045,000**
UTM Future Phases of Capital Construction				
Balance of UTM Renovation (Estimate)	$0	$0	$7,050,000	$7,050,000
Research Laboratory Allowance	$3,000,000	$0		$3,000,000
Total UTM Future Phases	**$3,000,000**	**$0**	**$7,050,000**	**$10,050,000**
Grand Totals	**$20,107,050**	**$1,250,000**	**$10,737,950**	**$32,095,000**

Operating Costs

The new addition to the South Building is expected to add $80,000 to UTM's annual operating costs.

The AV/IT Infrastructure has an estimated annual operating cost of $698,125 for the continued support of the AV/IT equipment and infrastructure at both campus locations; it is assumed that these costs are to be evenly split between both campuses.

VIII. Funding Sources

The total project cost of the Medical Academy is $20.107 million.

Provincial funding for this capital project will arrive in the form of a stream of payments annually over 20 years. The present value of annualized payments is $14.7 million. The balance of funding required for the Academy, will be raised or equally supported by participating Divisions. $6.107 million contingent financing will be raised through advancement or financed as short-term debt and carried by the two Divisions.

IX. Schedule

A preliminary project schedule for completion of the Medical Science Building work is as follows:

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Appointment of consultant(s)	October 2006
Tender demolition	December 2006
Tender renovation work	January 2007
Complete renovations	July 2007

A preliminary project schedule for completion of the UTM work is as follows:

Appointment of consultant(s)	October 2006
Schematic designs for Mississauga Academy spaces, both interim and final	November 2006
Construction cost estimate	December 2006
Tender demolition and UTM early projects	Dec 2006/Jan 2007
Complete UTM early projects	July 2007
Tender main UTM projects	June 2007
Complete UTM main projects	July 2008
Move-in for Mississauga Academy	August 2008

X. Recommendations

That the Planning and Budget Committee recommends to the Academic Board:

1. THAT the Project Planning Report for the Medical Academy at the University of Toronto at Mississauga be approved in principle;

2. THAT space vacated in the South Building and including an adjacent addition be made available to the UTM Medical Academy

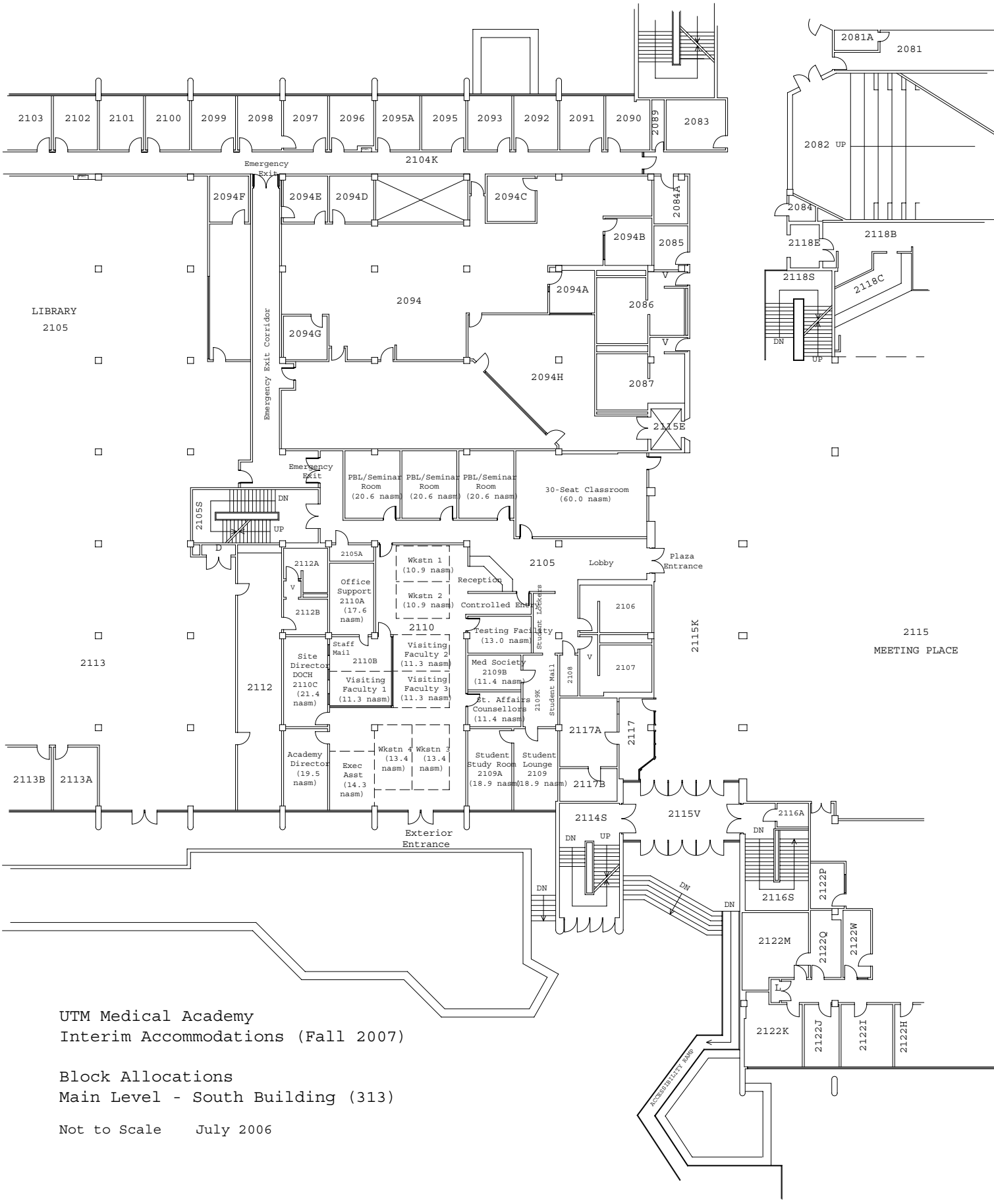
3. THAT improvements and renovations at the Medical Sciences Building to support the distributed learning model of the UTM Medical Academy be approved in principle;

4. THAT the project scope of 3415 nasm for the Academy having a total project cost of $20.107 million be approved; and

5. THAT $20.107M funding required for the UTM Medical Academy comprise:
    a) provincial funding in the form of annualized payments having a present value of $14.7 million, and
    b) $6.107 million short term debt carried by the Faculty of Medicine and the University of Toronto at Mississauga

APPENDIX A:

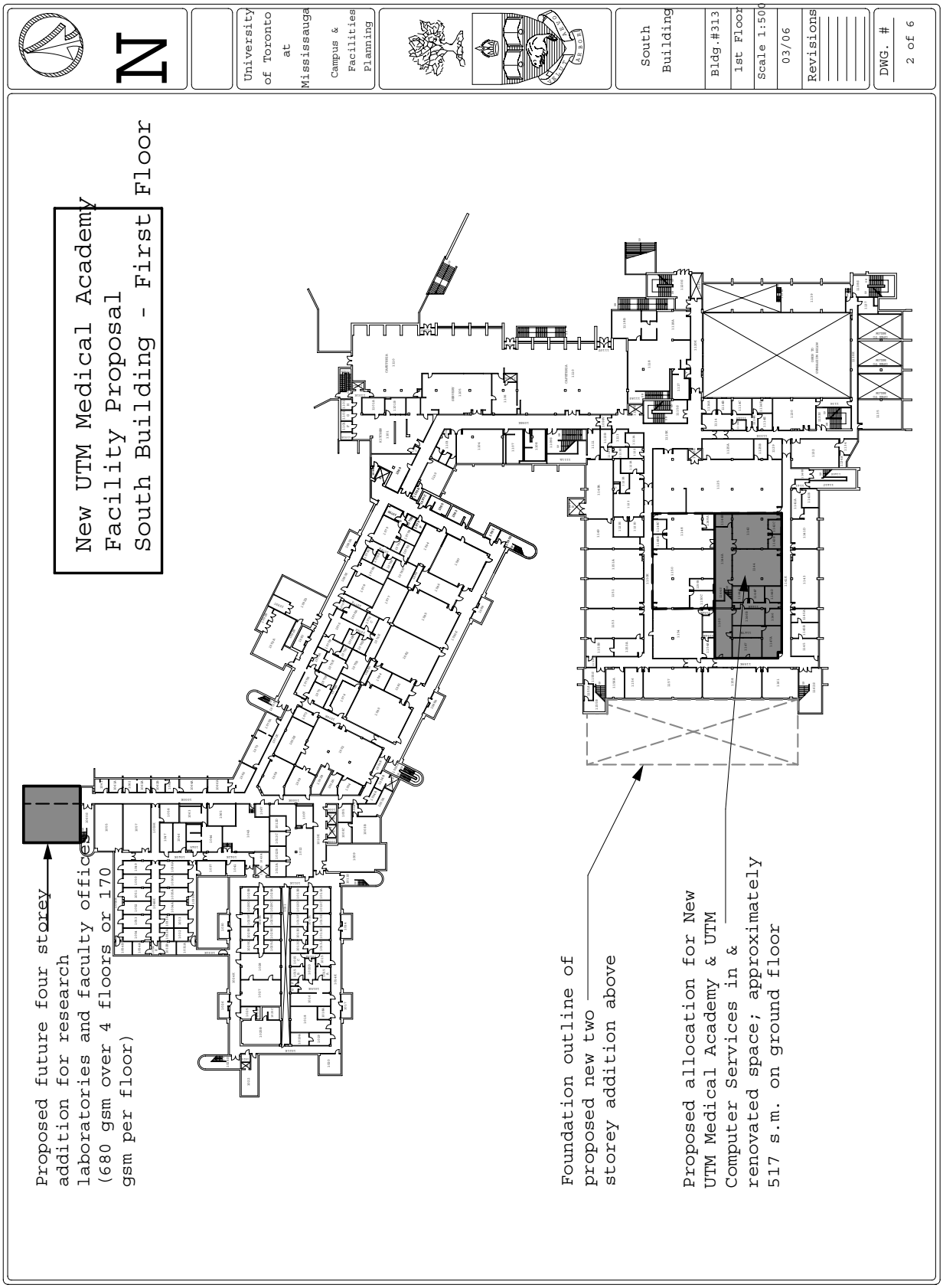
PROPOSED ACADEMY INTERIM SPACE PLAN
AND
CONCEPT PLANS FOR THE MEDICAL SCIENCES BUILDING AND UTM SOUTH BUILDING



UTM Medical Academy
Interim Accommodations (Fall 2007)

Block Allocations
Main Level - South Building (313)

Not to Scale July 2006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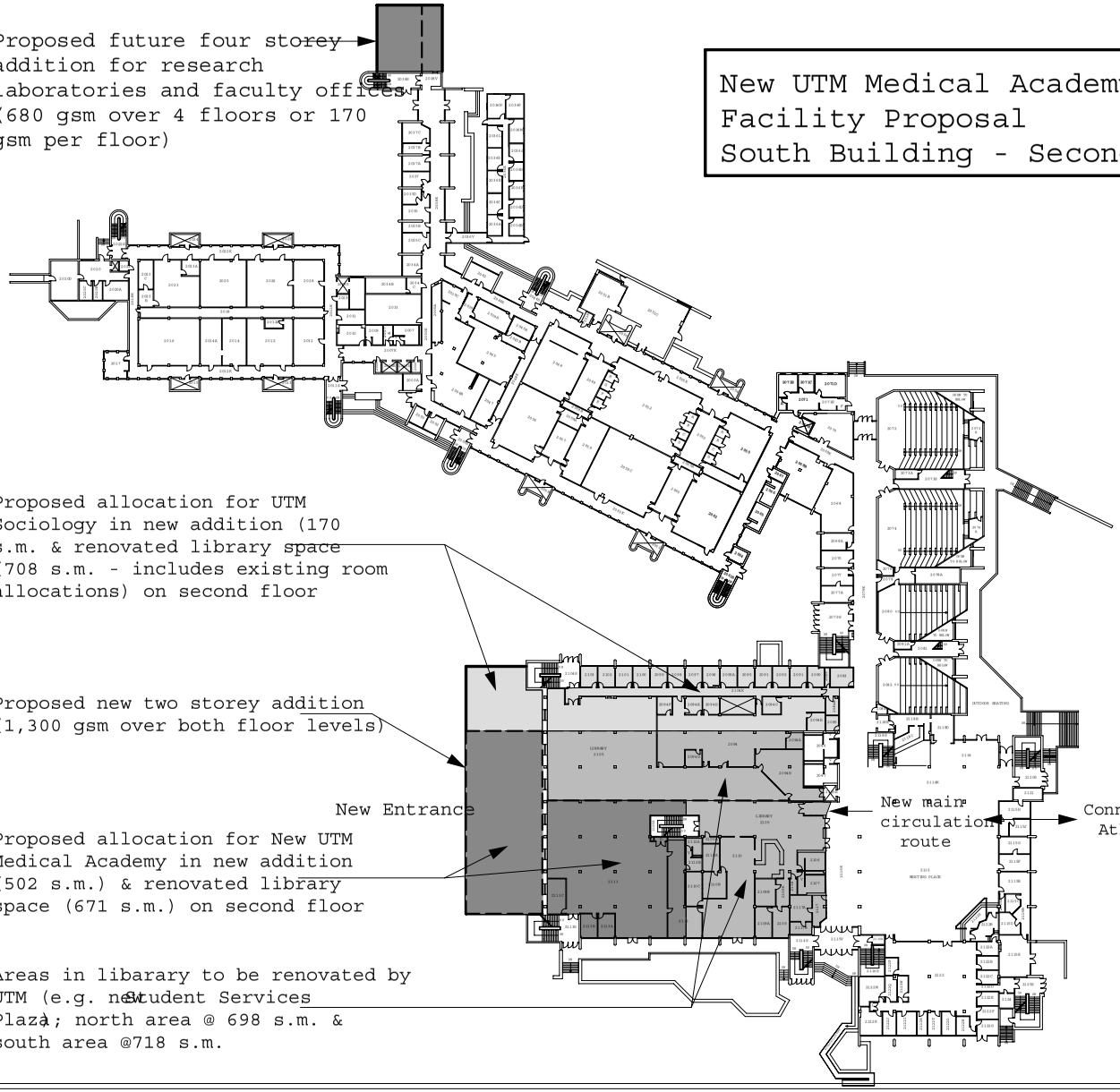
University of Toronto at Mississauga
Campus & Facilities Planning
South Building
Bldg.#313
1st Floor
Scale 1:500
03/06
Revisions
DWG. #
2 of 6
New UTM Medical Academy
Facility Proposal
South Building - First Floor
Proposed future four storey addition for research laboratories and faculty offices (680 gsm over 4 floors or 170 gsm per floor)
Foundation outline of proposed new two storey addition above
Proposed allocation for New UTM Medical Academy & UTM Computer Services in & renovated space; approximately 517 s.m. on ground floor

New UTM Medical Academy Facility Proposal South Building - Second Floor



N

University of Toronto at Mississauga

Campus & Facilities Planning

South Building

Bldg.#313

Main Floor

Scale 1:500

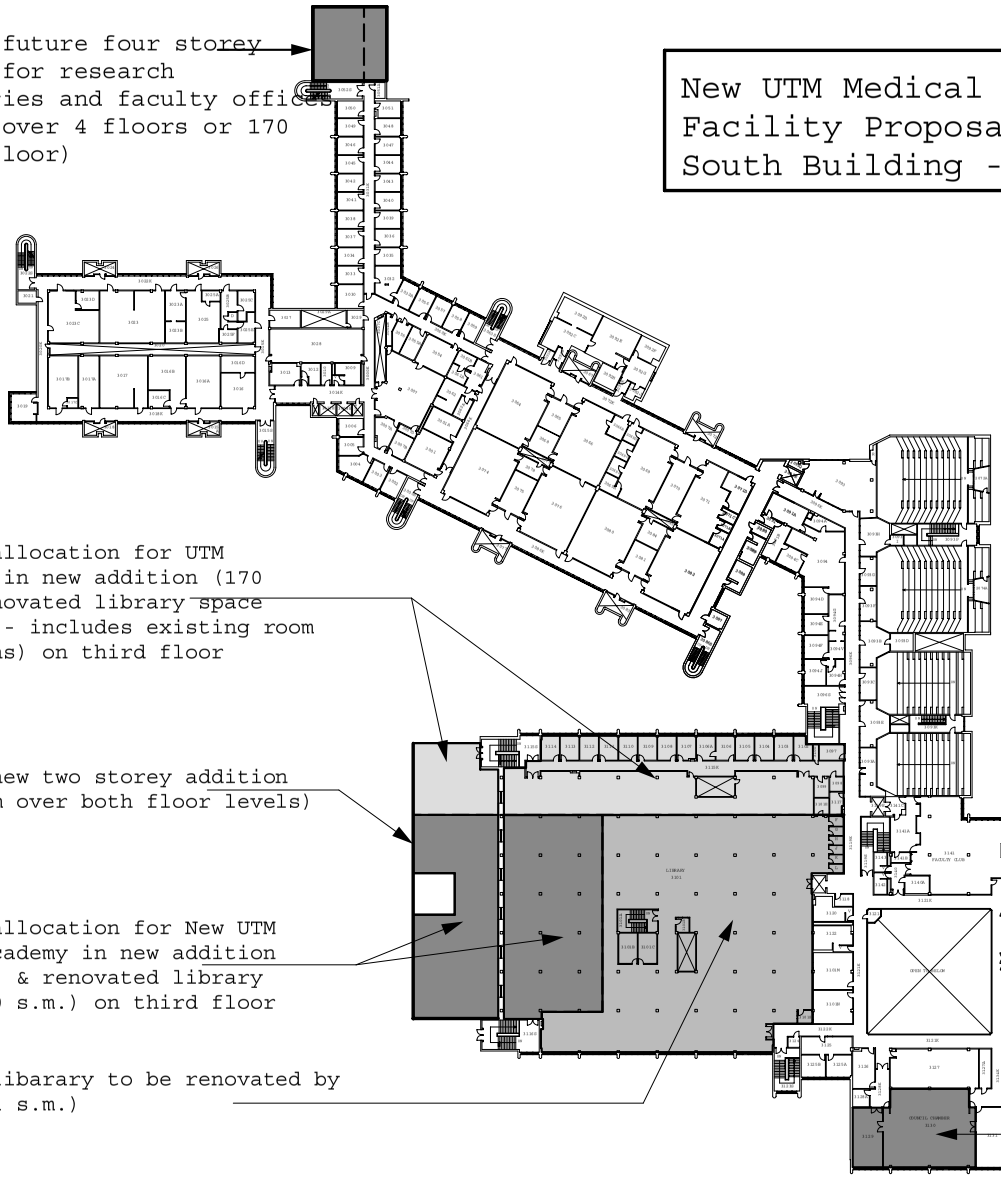
03/06

Revisions

DWG. #

3 of 6

New UTM Medical Academy Facility Proposal South Building - Third Floor



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University of Toronto at Mississauga

Campus & Facilities Planning

South Building

Bldg.#313

3rd Floor

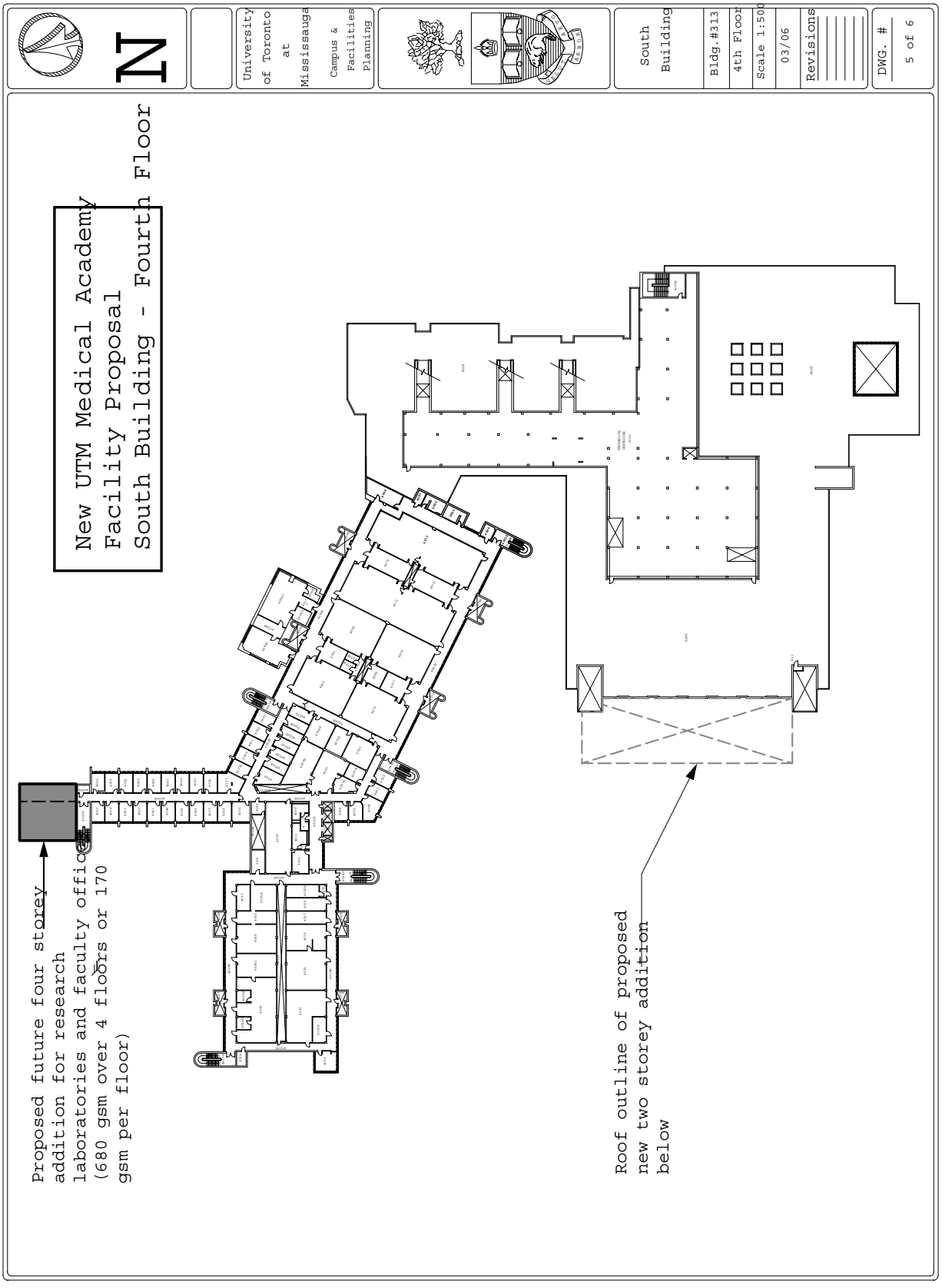
Scale 1:500

03/06

Revisions

DWG. #

4 of 6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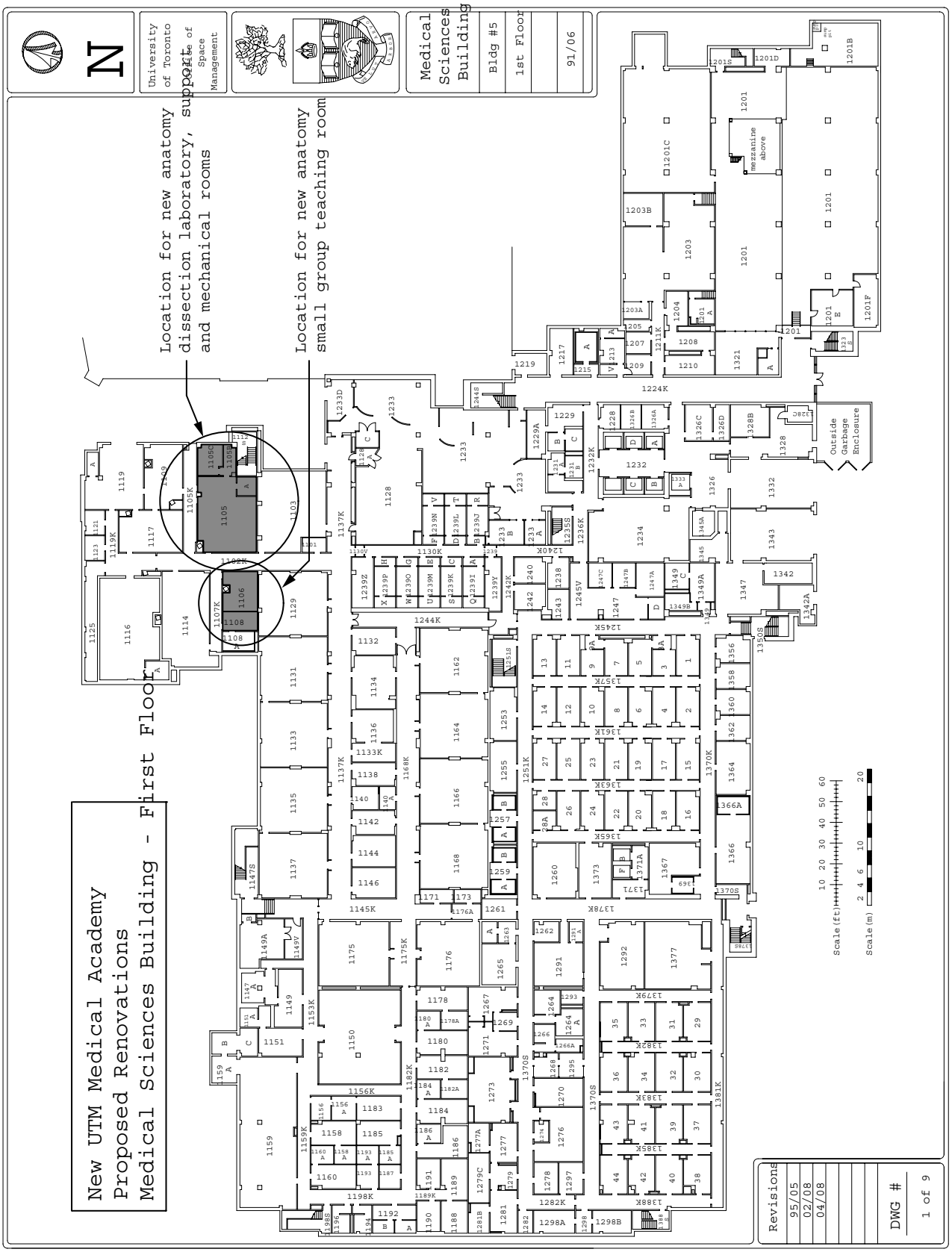
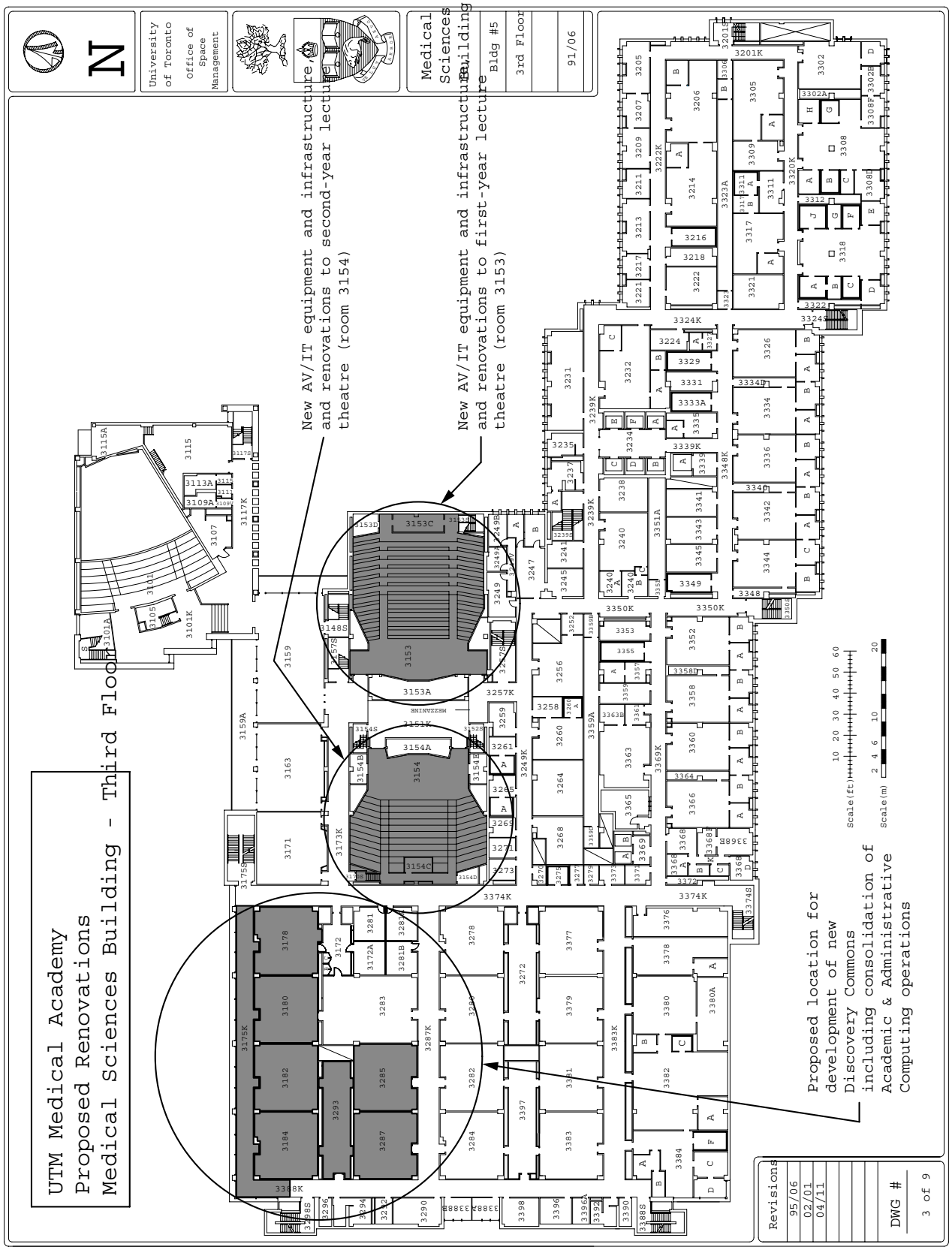
University of Toronto at Mississauga
Campus & Facilities Planning
South Building
Bldg.#313
4th Floor
Scale 1:500
03/06
Revisions
DWG. #
5 of 6
New UTM Medical Academy
Facility Proposal
South Building - Fourth Floor
Proposed future four storey addition for research laboratories and faculty offic
(680 gsm over 4 floors or 170 gsm per floor)
Roof outline of proposed new two storey addition below


N
University of Toronto
Office of Space Management
Medical Sciences Building
Bldg #5
1st Floor
91/06
Location for new anatomy dissection laboratory, support and mechanical rooms
Location for new anatomy small group teaching room
New UTM Medical Academy
Proposed Renovations
Medical Sciences Building - First Floor
Outside Garbage Enclosure
mezzanine above
Revisions
95/05
02/08
04/08
DWG #
1 of 9
Scale(ft)
Scale(m)


N
University of Toronto
Office of Space Management
Medical Sciences Building
Bldg #5
3rd Floor
91/06
UTM Medical Academy
Proposed Renovations
Medical Sciences Building - Third Floor
New AV/IT equipment and infrastructure and renovations to second-year lecture theatre (room 3154)
New AV/IT equipment and infrastructure and renovations to first-year lecture theatre (room 3153)
Proposed location for development of new Discovery Commons including consolidation of Academic & Administrative Computing operations
Revisions
95/06
02/01
04/11
DWG #
3 of 9

APPENDIX B:

PROJECT COST ESTIMATES

Project Title: **Medical Academy at MSB**

TABLE 1: Total Project Cost Estimates

Items	notes	Anatomy Lab upgrade	Upgrade Lecture theatres	Discovery Commons	Total
area **NASM**			684	612	1296
area **GSM**			748	780	1528
Base Construction Cost, Sept 2006	A	na	$1,004,000	$1,097,000	$2,101,000
Asbestos abatement allowance	B		$200,000	$170,000	$370,000
Construction Contingency on above		na	$120,400	$126,700	$247,100
Applicable GST		na	$26,223	$27,595	$53,818
Total Construction Costs, including taxes		na	**$1,350,623**	**$1,421,295**	**$2,771,918**
Infrastructure Upgrades in Sector		na	na	$0	$0
Secondary Effects	C	na	not incl	not incl	$0
Demolition		na	inc	inc	$0
Landscaping		na	na	na	$0
Permits & Insurance		0	$0	$0	$0
Professional Fees	D	0	$419,218	$285,000	$704,218
Computing Infrastructure	E	na	$5,000	$20,000	$25,000
Telephone Terminations		na	$600	$3,000	$3,600
Audio/Visual	F	na	$1,479,830	$280,188	$1,760,018
Moving		na	$0	$10,000	$10,000
Staging		na	$0	$10,000	$10,000
Furnishings: Department	G	na	$0	$220,000	$220,000
Furnishings: Classrooms		na	$30,000	$0	$30,000
Equipment	H	0	$0	$0	$0
Security & access systems		na	$5,000	$23,000	$28,000
Signage: Interior & Exterior		na	$1,000	$3,000	$4,000
Signage: Donor Recognition		na	$0	$0	$0
Groundbreaking & Building opening		0	$0	$0	$0
Miscellaneous		0	$5,000	$5,000	$10,000
Project Contingency incl escalation allowance to jan 2007		0	$204,700	$146,701	$351,401
Finance Costs - allowance	J	0	$105,029	$72,816	$177,845
Total Project Cost Estimate GST included, including escalation.		**$452,000**	**$3,606,000**	**$2,500,000**	**$6,558,000**

notes
- A per preliminary budget estimates by AW Hooker Sep 6th 2006
- B carried at $25/ft2 for lecture and $20/ft2 for commons.
- C relocation of existing occupants NOT included.
- D Architect and Sub-consultants, Management, disbursements.
- E To cover network upgrades
- F per 19th Sept 2006 schedule from Fac of Med computing group with taxes and 10% contingency
- G rough estimate off data sheets
- H no allowance for computers & printers etc.
- J allowance only.. Financing TBD

prepared jcb 7th Sept 2006
revised22nd Sept 2006

Project Title: **Medical Academy at UTM**

TABLE 1: Total Project Cost Estimates

Items	notes	Council Chamber renovations	Total new addition + reno for MA only	total
area NASM			2,030 MA + 190 UTM	**2,220**
area GSM			3,407 MA + 340 UTM	**3,747**
Construction Cost, Sept 2006	A		$7,929,200	**$7,929,200**
Construction Contingency			$634,336	**$634,336**
Applicable GST			$169,558	**$169,558**
Total Construction Costs, including taxes			$8,733,094	**$8,733,094**
Infrastructure Upgrades in Sector			$0	**$0**
Secondary Effects			$0	**$0**
Demolition			$0	**$0**
Landscaping	B		$150,000	**$150,000**
Permits & Insurance			$75,000	**$75,000**
Professional Fees			$1,516,000	**$1,516,000**
Computing Infrastructure			$20,000	**$20,000**
Telephone Terminations			$28,000	**$28,000**
Audio/Visual	C		$1,555,358	**$1,555,358**
Moving			$10,000	**$10,000**
Staging			$0	**$0**
Furnishings: Department			$580,000	**$580,000**
Furnishings: Classrooms			$180,000	**$180,000**
Equipment			$50,000	**$50,000**
Security & access systems			$25,000	**$25,000**
Signage: Interior & Exterior			$30,000	**$30,000**
Signage: Donor Recognition			$0	**$0**
Groundbreaking & Building opening			$20,000	**$20,000**
Miscellaneous			$12,000	**$12,000**
Project Contingency & escalation allow			$1,008,752	**$1,008,752**
Finance Costs			$419,796	**$419,796**
Total Project Cost Estimate GST included, including escalation.		$624,000	$14,413,000	**$15,037,000**

notes A per AW Hooker estimate
B includes local fire route upgrade
C per Faculty of Medicine computing group.

prepared jcb 7th Sept 2006
revised 22nd Sept 2006

APPENDIX C:

AV/IT EQUIPMENT LIST
FOR THE MISSISSAUGA ACADEMY
AT UTM & MSB

Phase One - 2006-07

The total cost estimate for Phase One of the IT/AV project $1,106,620.00

UTM portion:	$ 206,560.00
MSB portion:	$ 800,060.00
Other portion:	$ 100,000.00

This phase includes the following IT/AV components, which will go to tender:

A	MSB Med 1 lecture theatre (MSB 3153)	$ 533,500.00
B	UTM Council Room (as a temporary classroom)	$ 48,000.00
C	MSB VC Studio	$ 53,160.00
D	MSB Video Control Room	$ 169,400.00
E	UTM VC Studio	$ 53,160.00
F	UTM Video Control Room	$ 61,400.00
G	MSB VC-capable offices (2)	$ 9,000.00
H	UTM VC-capable offices (2)	$ 9,000.00

This phase also includes the following networking components, which will be managed in-house:

Campus-to-campus dedicated network link	$ 100,000.00
MSB in-building networking	$ 35,000.00
UTM in-building networking	$ 35,000.00

						Other Calculations			
Detailed IT/AV costing		UNIT COST	#	TOTAL COST		LEASE	MAINTAIN	INSTALL	OSM
A	MSB Med 1 lecture theatre (MSB 3153)	1 room		$ 533,500.00					
1	Large-room VC codec, HD capable	$ 30,000.00	1	$ 30,000.00	lease?	$ 30,000.00			
2	High-definition PTZ cameras	$ 12,000.00	3	$ 36,000.00			$ 36,000.00		
3	Triple rear projection setup	$ 55,000.00	3	$ 165,000.00			$ 165,000.00		
4	Matrix switch for flexible video display	$ 50,000.00	1	$ 50,000.00	lease?	$ 50,000.00			
5	Document camera, 3-chip	$ 12,000.00	1	$ 12,000.00			$ 12,000.00		
6	Press-to-talk boundary microphones, 1-per-2 students	$ 500.00	160	$ 80,000.00			$ 80,000.00		
7	Mic mixer for per-student mics in lecture theatres	$ 20,000.00	1	$ 20,000.00			$ 20,000.00		
8	Standard U of T teaching station	$ 20,500.00	1	$ 20,500.00	OSM?		$ 20,500.00		$ 20,500.00
9	Pressure-sensitive floor pads for podium, question areas	$ 1,000.00	3	$ 3,000.00			$ 3,000.00		
10	Upgraded Crestron PC/touchscreen for teaching station	$ 13,000.00	1	$ 13,000.00			$ 13,000.00		
11	Permanent wired mics w. stands for question areas	$ 500.00	2	$ 1,000.00			$ 1,000.00		
12	Annotation tablet	$ 2,000.00	1	$ 2,000.00			$ 2,000.00		
13	Crestron Pro controller	$ 4,000.00	1	$ 4,000.00			$ 4,000.00		
14	Large-room audio amp, speakers, enhancements	$ 25,000.00	1	$ 25,000.00	OSM?		$ 25,000.00		$ 25,000.00

15	19" rack to mount equipment	$	1,500.00	1	$	1,500.00			$	1,500.00	
16	Monitoring equipment for control booth technician	$	5,000.00	1	$	5,000.00			$	5,000.00	
17	UPS for power backup and filtering	$	2,000.00	1	$	2,000.00			$	2,000.00	
18	Wireless microphone and base station	$	1,500.00	1	$	1,500.00			$	1,500.00	
19	Custom-built cart for lecturer display / presenter camera	$	5,000.00	1	$	5,000.00			$	5,000.00	
20	21" to 40" LCD monitors for lecturer display	$	3,000.00	3	$	9,000.00			$	9,000.00	
21	Cabling, wiring, adapters, power supplies, etc.	$	8,000.00	1	$	8,000.00			$	8,000.00	
22	*Installation of AV equipment*	$	80.00	50	$	4,000.00					$ 4,000.00
23	*Installation of per-student microphones*	$	80.00	120	$	9,600.00					$ 9,600.00
24	*Installation and programming of Crestron system*	$	80.00	80	$	6,400.00					$ 6,400.00
25	*Installation of VC equipment*	$	80.00	100	$	8,000.00					$ 8,000.00
26	*Installation of audio equipment, including mic mixer*	$	80.00	150	$	12,000.00					$ 12,000.00
B	UTM Council Room (as a temporary classroom)	1 room			$	48,000.00					
1	VC cart w. 2 flat screens, camera, HD-capable codec	$	25,000.00	1	$	25,000.00	lease?	$ 25,000.00			
2	2nd high-definition PTZ camera	$	12,000.00	1	$	12,000.00			$	12,000.00	
3	Additional microphones for VC unit	$	1,000.00	6	$	6,000.00			$	6,000.00	
4	Cabling, wiring, adapters, power supplies, etc.	$	1,000.00	1	$	1,000.00			$	1,000.00	
5	*Installation of VC equipment*	$	80.00	50	$	4,000.00					$ 4,000.00
C	MSB VC Studio	1 room			$	53,160.00					
1	VC cart w. 2 flat screens, camera, codec, HD capable	$	25,000.00	1	$	25,000.00	lease?	$ 25,000.00			
2	Extra microphone and data input devices for VC	$	2,500.00	1	$	2,500.00			$	2,500.00	
3	Ceiling-mounted 2500 lumen DLP data projector, screen	$	7,000.00	2	$	14,000.00			$	14,000.00	
4	Classroom PC w. large flat-screen monitor	$	4,500.00	1	$	4,500.00			$	4,500.00	
5	Wall-mounted Crestron push-button touchpad	$	2,000.00	1	$	2,000.00			$	2,000.00	
6	Cabling, wiring, adapters, power supplies, etc.	$	1,000.00	1	$	1,000.00			$	1,000.00	
7	*Installation and setup of VC and AV equipment*	$	80.00	40	$	3,200.00					$ 3,200.00
8	*Installation and setup of Crestron controller*	$	80.00	12	$	960.00					$ 960.00
D	MSB Video Control Room	1 room			$	169,400.00					
1	19" rack to mount equipment	$	1,500.00	1	$	1,500.00			$	1,500.00	
2	16-port HD-capable bridge w. CP and transcoding	$	65,000.00	1	$	65,000.00	lease?	$ 65,000.00			
3	VC network management / scheduling system	$	35,000.00	1	$	35,000.00			$	35,000.00	
4	Streaming media and content recording system	$	30,000.00	1	$	30,000.00	lease?	$ 30,000.00			
5	UPS for power backup and filtering	$	2,000.00	1	$	2,000.00			$	2,000.00	
6	VC technician workstation w. hi-grade video, 4 monitors	$	5,500.00	2	$	11,000.00			$	11,000.00	
7	Furniture for technician workstations	$	2,000.00	2	$	4,000.00			$	4,000.00	
8	Standalone video control unit w. fader, joystsick, etc.	$	4,500.00	2	$	9,000.00			$	9,000.00	
9	Cabling, wiring, adapters, power supplies, etc.	$	1,500.00	1	$	1,500.00			$	1,500.00	

	10 *Installation and setup of bridge and mgmt software*	$	80.00	80	$	6,400.00					$ 6,400.00
	11 *Installation and configuration of technician workstations*	$	80.00	50	$	4,000.00					$ 4,000.00
E	UTM VC Studio	1 room			$	53,160.00					
	1 VC cart w. 2 flat screens, camera, codec, HD capable	$	25,000.00	1	$	25,000.00	lease?	$ 25,000.00			
	2 Extra microphone and data input devices for VC	$	2,500.00	1	$	2,500.00			$ 2,500.00		
	3 Ceiling-mounted 2500 lumen DLP data projector, screen	$	7,000.00	2	$	14,000.00			$ 14,000.00		
	4 Classroom PC w. large flat-screen monitor	$	4,500.00	1	$	4,500.00			$ 4,500.00		
	5 Wall-mounted Crestron push-button touchpad	$	2,000.00	1	$	2,000.00			$ 2,000.00		
	6 Cabling, wiring, adapters, power supplies, etc.	$	1,000.00	1	$	1,000.00			$ 1,000.00		
	7 *Installation and setup of VC and AV equipment*	$	80.00	40	$	3,200.00					$ 3,200.00
	8 *Installation and setup of Crestron controller*	$	80.00	12	$	960.00					$ 960.00
F	UTM Video Control Room	1 room			$	61,400.00					
	1 VC technician workstation w. hi-grade video, 4 monitors	$	5,500.00	2	$	11,000.00			$ 11,000.00		
	2 Furniture for technician workstations	$	2,000.00	2	$	4,000.00			$ 4,000.00		
	3 Streaming media and content recording system	$	30,000.00	1	$	30,000.00	lease?	$ 30,000.00			
	4 Standalone video control unit w. fader, joystsick, etc.	$	4,500.00	2	$	9,000.00			$ 9,000.00		
	5 Cabling, wiring, adapters, power supplies, etc.	$	1,000.00	1	$	1,000.00			$ 1,000.00		
	6 *Installation and setup of content recording system*	$	80.00	30	$	2,400.00					$ 2,400.00
	7 *Installation and configuration of technician workstations*	$	80.00	50	$	4,000.00					$ 4,000.00
G	MSB VC-capable offices (2)	1 room			$	9,000.00					
	1 VC appliance for offices, also use as monitor	$	4,500.00	2	$	9,000.00			$ 9,000.00		
H	UTM VC-capable offices (2)	1 room			$	9,000.00					
	1 VC appliance for offices, also use as monitor	$	4,500.00	2	$	9,000.00			$ 9,000.00		
Grand Totals - Phase One								**$ 280,000.00**	**$ 587,500.00**	**$ 69,120.00**	**$ 45,500.00**

Phase Two - 2007-08

The total cost estimate for Phase One of the IT/AV project $ 1,633,360.00

UTM portion: $ 1,028,860.00
MSB portion: $ 604,500.00

This phase includes the following

A	MSB Med 2 lecture theatre (MSB 3154)	$ 604,500.00			
B	Both new UTM 60-seat lecture theatres	$ 785,800.00	or	$392,900.00	ea
C	All 4 new UTM 30-seat classrooms	$ 59,480.00	or	$ 14,870.00	ea
D	Both new UTM 20-seat classrooms	$ 29,580.00	or	$ 14,790.00	ea
E	All 12 new UTM PBL / Seminar Rooms	$ 154,000.00	or	$ 12,833.33	ea

							Other calculations		
Detailed IT/AV Costing	UNIT COST	#	TOTAL COST		LEASE	MAINTAIN	INSTALL	OSM	
A MSB Med 2 lecture theatre (MSB 3154)	1 room		$604,500.00						
1 Large-room VC codec, HD capable	$ 30,000.00	1	$ 30,000.00	lease?	$ 30,000.00				
2 High-definition PTZ cameras	$ 12,000.00	3	$ 36,000.00			$ 36,000.00			
3 High-end triple rear projection setup	$ 55,000.00	3	$165,000.00			$ 165,000.00			
4 Matrix switch for flexible video display	$ 50,000.00	1	$ 50,000.00	lease?	$ 50,000.00				
5 Document camera, 3-chip	$ 12,000.00	1	$ 12,000.00			$ 12,000.00			
6 Press-to-talk boundary microphones, 1-per-1 students	$ 500.00	290	$145,000.00			$ 145,000.00			
7 Mic mixer for per-student mics in lecture theatres	$ 20,000.00	1	$ 20,000.00			$ 20,000.00			
8 Standard U of T teaching station	$ 20,500.00	1	$ 20,500.00	OSM?		$ 20,500.00		$ 20,500.00	
9 Pressure-sensitive floor pads for podium, question areas	$ 1,000.00	1	$ 1,000.00			$ 1,000.00			
10 Upgraded Crestron PC/touchscreen for teaching station	$ 13,000.00	1	$ 13,000.00			$ 13,000.00			
11 Permanent wired mics w. stands for question areas	$ 500.00	2	$ 1,000.00			$ 1,000.00			
12 Annotation tablet	$ 2,000.00	1	$ 2,000.00			$ 2,000.00			
13 Crestron Pro controller	$ 4,000.00	1	$ 4,000.00			$ 4,000.00			
14 Large-room audio amp, speakers, enhancements	$ 25,000.00	1	$ 25,000.00	OSM?		$ 25,000.00		$ 25,000.00	
15 19" rack to mount equipment	$ 1,500.00	1	$ 1,500.00			$ 1,500.00			
16 Monitoring equipment for control booth technician	$ 5,000.00	1	$ 5,000.00			$ 5,000.00			
17 UPS for power backup and filtering	$ 2,000.00	1	$ 2,000.00			$ 2,000.00			
18 Wireless microphone and base station	$ 1,500.00	1	$ 1,500.00			$ 1,500.00			
19 Custom-built cart for lecturer display / presenter camera	$ 5,000.00	1	$ 5,000.00			$ 5,000.00			
20 21" to 40" LCD monitors for lecturer display	$ 3,000.00	3	$ 9,000.00			$ 9,000.00			
21 Cabling, wiring, adapters, power supplies, etc.	$ 8,000.00	1	$ 8,000.00			$ 8,000.00			
22 *Installation of AV equipment*	$ 80.00	50	$ 4,000.00				$ 4,000.00		
23 *Installation of per-student microphones*	$ 80.00	200	$ 16,000.00				$ 16,000.00		
24 *Installation and programming of Crestron system*	$ 80.00	100	$ 8,000.00				$ 8,000.00		
25 *Installation of VC equipment*	$ 80.00	100	$ 8,000.00				$ 8,000.00		

	26 *Installation of audio equipment, including mic mixer*	$	80.00	150	$ 12,000.00					$ 12,000.00		
B	Both new UTM 60-seat lecture theatres	2 rooms			$785,800.00							
	1 Large-room VC codec, HD capable	$	30,000.00	2	$ 60,000.00	lease?	$ 60,000.00					
	2 High-definition PTZ cameras	$	12,000.00	6	$ 72,000.00			$	72,000.00			
	3 High-end triple front projection setup	$	40,000.00	6	$240,000.00			$	240,000.00			
	4 Matrix switch for flexible video display	$	50,000.00	2	$100,000.00	lease?	$ 100,000.00					
	5 Document camera, 3-chip	$	12,000.00	2	$ 24,000.00			$	24,000.00			
	6 Press-to-talk boundary microphones, 1-per-2 students	$	500.00	40	$ 20,000.00			$	20,000.00			
	7 Mic mixer for per-student mics in lecture thtrs	$	20,000.00	2	$ 40,000.00			$	40,000.00			
	8 Standard U of T teaching station	$	20,500.00	2	$ 41,000.00	OSM?		$	41,000.00			$ 41,000.00
	9 Pressure-sensitive floor pads for podium, question areas	$	1,000.00	6	$ 6,000.00			$	6,000.00			
	10 Upgraded Crestron PC/touchscreen for teaching station	$	13,000.00	2	$ 26,000.00			$	26,000.00			
	11 Permanent wired mics w. stands for question areas	$	500.00	4	$ 2,000.00			$	2,000.00			
	12 Annotation tablet	$	2,000.00	2	$ 4,000.00			$	4,000.00			
	13 Crestron Pro controller	$	4,000.00	2	$ 8,000.00			$	8,000.00			
	14 Large-room audio amplifier & speakers, enhancements	$	20,000.00	2	$ 40,000.00	OSM?		$	40,000.00			$ 40,000.00
	15 19" rack to mount equipment	$	1,500.00	2	$ 3,000.00			$	3,000.00			
	16 Monitoring equipment for control booth technician	$	5,000.00	2	$ 10,000.00			$	10,000.00			
	17 UPS for power backup and filtering	$	2,000.00	2	$ 4,000.00			$	4,000.00			
	18 Wireless microphone and base stations	$	1,500.00	2	$ 3,000.00			$	3,000.00			
	19 Custom-built cart for lecturer displays and presenter cam	$	5,000.00	2	$ 10,000.00			$	10,000.00			
	20 21" to 40" LCD monitors for lecturer display	$	3,000.00	6	$ 18,000.00			$	18,000.00			
	21 Cabling, wiring, adapters, power supplies, etc.	$	6,000.00	1	$ 6,000.00			$	6,000.00			
	22 *Installation of AV equipment*	$	80.00	60	$ 4,800.00					$ 4,800.00		
	23 *Installation of per-student microphones*	$	80.00	100	$ 8,000.00					$ 8,000.00		
	24 *Installation and programming of Crestron system*	$	80.00	150	$ 12,000.00					$ 12,000.00		
	25 *Installation of VC equipment*	$	80.00	150	$ 12,000.00					$ 12,000.00		
	26 *Installation of audio equipment, including mic mixer*	$	80.00	150	$ 12,000.00					$ 12,000.00		
C	All 4 new UTM 30-seat classrooms	4 rooms			$ 59,480.00							
	1 Classroom PC w. large flat-screen monitor	$	4,500.00	4	$ 18,000.00			$	18,000.00			
	2 Ceiling-mounted 2500 lumen DLP data projector, screen	$	7,000.00	4	$ 28,000.00			$	28,000.00			
	3 Wall-mounted Crestron push-button touchpad	$	2,000.00	4	$ 8,000.00			$	8,000.00			
	4 Cabling, wiring, adapters, power supplies, etc.	$	1,000.00	1	$ 1,000.00			$	1,000.00			
	5 *Installation of AV equipment*	$	80.00	36	$ 2,880.00					$ 2,880.00		
	6 *Installation and programming of Crestron system*	$	80.00	20	$ 1,600.00					$ 1,600.00		
D	Both new UTM 20-seat classrooms	2 rooms			$ 29,580.00							
	1 Classroom PC w. large flat-screen monitor	$	4,500.00	2	$ 9,000.00			$	9,000.00			
	2 Ceiling-mounted 2500 lumen DLP data projector, screen	$	7,000.00	2	$ 14,000.00			$	14,000.00			

3	Wall-mounted Crestron push-button touchpad	$	2,000.00	2	$	4,000.00		$	4,000.00		
4	Cabling, wiring, adapters, power supplies, etc.	$	500.00	1	$	500.00		$	500.00		
5	*Installation of AV equipment*	$	80.00	16	$	1,280.00				$	1,280.00
6	*Installation and programming of Crestron system*	$	80.00	10	$	800.00				$	800.00
E	All 12 new UTM PBL / Seminar Rooms	12 rooms			$	154,000.00					
1	Classroom PC w. large flat-screen monitor	$	4,500.00	12	$	54,000.00		$	54,000.00		
2	Regular PTZ cameras, 2 per room	$	1,000.00	24	$	24,000.00		$	24,000.00		
3	Wall-mounted Crestron 6" colour touchscreen (v3000)	$	3,000.00	12	$	36,000.00		$	36,000.00		
4	Crestron Pro controller (for all PBL rooms)	$	4,000.00	1	$	4,000.00		$	4,000.00		
5	Portable DLP data projectors	$	4,000.00	2	$	8,000.00		$	8,000.00		
6	Cabling, wiring, adapters, power supplies, etc.	$	4,000.00	1	$	4,000.00		$	4,000.00		
7	*Installation of cameras*	$	80.00	120	$	9,600.00		$	9,600.00		
8	*Installation and programming of Crestron system*	$	80.00	180	$	14,400.00				$	14,400.00
Grand Totals - Phase Two							**$ 240,000.00**	**$ 1,275,600.00**		**$ 117,760.00**	**$ 126,500.00**

APPENDIX D:

SPACE STUDY OF THE EXISTING LIBRARY IN THE SOUTH BUILDING, UNIVERSITY OF TORONTO AT MISSISSAUGA

EXISTING LIBRARY SPACE – SOUTH BUILDING, UTM

The library structure at the University of Toronto at Mississauga was purpose-built in 1971, occupying much of the west wing of the UTM South Building. The library is conveniently located with access directly adjacent to the “Meeting Place” on the main level and the primary administrative spaces on the upper level. With the completion of the Wellness Centre and its direct connection to the Meeting Place, the library wing will be well located at the hub of activities in the South Building.

The library has been incrementally renovated over the years to best suit changing functions. This space, as currently configured, provides a total of 5470 nasm of space for library uses.

All floor to floor heights are modest (approximately 10ft) and are equipped with drop ceilings to allow for mechanical service space. Painted concrete block wall construction has been continued throughout the library. Floors are covered with vinyl tile or carpet. Two exposures (west and south) allow access to natural light through generously proportioned windows.

In 2005 a new library building for the UTM campus was approved; construction is currently underway and the space is scheduled to be occupied in the fall of 2006. The move of library functions from their current location provides an opportunity to create facilities to accommodate a portion of the new Medical Academy and to offer UTM additional space for academic, administrative, and student services functions.

As the UTM library was purpose-built for library functions which require large, open floor plates, configuration of the space for the functions described above – all of which generally require more definition – additional non-assignable space in the form of corridors will need to be introduced reducing the overall useable space somewhat. A test of how the space may be laid-out (Figure D-1) demonstrates that an 85% efficiency may be reached, yielding approximately 4650 nasm of useable space (of which approximately 2000 nasm is located on the main (second) level and 2325 nasm on the third level) for these types of activities if the space remains the same in all other respects.

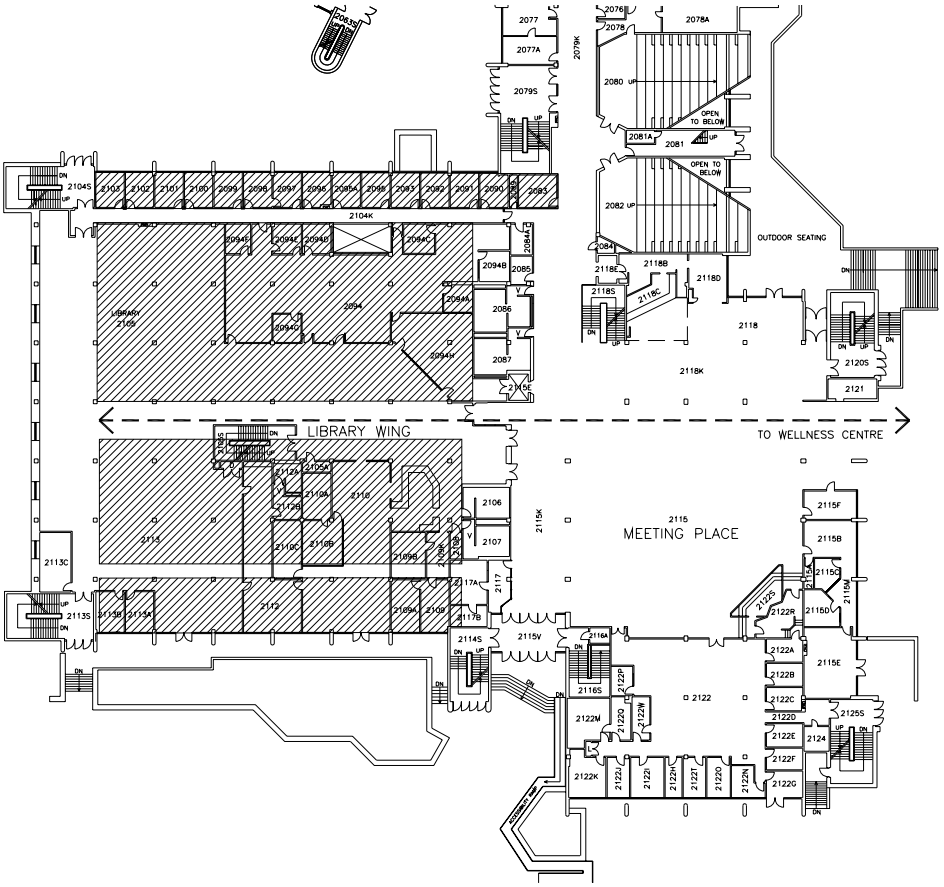


Figure D-1: Main Level Test Layout

Figure D-1 demonstrates the introduction of additional public/corridor space to the vacated library area. In this iteration, a wide primary corridor is added that may function as the “main street” running off the Meeting Place “town square.” Smaller secondary “streets” divide the remaining space into useable parcels. The further division of the area is necessary in order to accommodate the varying depth of space required for the different facilities. For example, a faculty or administrative office requires far less depth than does a large classroom or large cluster of open offices or student-related service spaces. Finally, smaller, more dispersed public spaces may be introduced within this grid of functions to allow for a variety of public uses. Here, an open “piazza” ends the vista down the “main street” and provides a different, more intimate space than the Meeting Place for interaction and exchange.

In considering the future use and programming of vacated library spaces, it is reasonable to consider all areas accommodated within the library wing, including several non-library spaces. The Departments of Geography and Sociology line the north wall of this wing. Together, they occupy 387 nasm of space within this area. A further 212 nasm of central administrative space, departmental support space, and classroom space occupies parts of the east end of the wing at the connection to the South Building. Combining these areas with the projected space available in the vacated library, 5250 nasm of space may be considered available within this wing, assuming those functions currently accommodated here are relocated or reconfigured within this space.

Physical Infrastructure

Access to Light/Views

The vacated space of the UTM library is primarily held on two levels – main (second) and third. Each has access to natural light only from two perimeter walls (south and west). A third perimeter wall (north) currently accommodates Geography and Sociology faculty offices off a single loaded corridor. The final wall connects the library to interior spaces in the South Building including the Meeting Place on the main level.

Access to natural light will be one of the greatest challenges in the adaptive reuse of this space as the span of the structure has been purpose built for library holdings, which require large floor plates, and not for a typical academic use that assumes offices, classrooms, and other facilities all requiring access to direct or passive natural light sources where possible. The somewhat low floor to floor height (approximately 10 ft on each level) will exacerbate any attempt to bring light into the core of the structure.

Some carving out of the upper floors may be possible to create a skylight and bring natural light down to all levels at the centre. This may be achieved in conjunction with the introduction of an open central stair connecting all levels. Any carving out of space to allow for additional natural light penetration would, however, decrease the overall useable area, but would increase its value in terms of occupant comfort. Similarly, if those departments located along one wall of the structure could be consolidated on one level or in a different location within UTM facilities, further access to natural light would be possible.

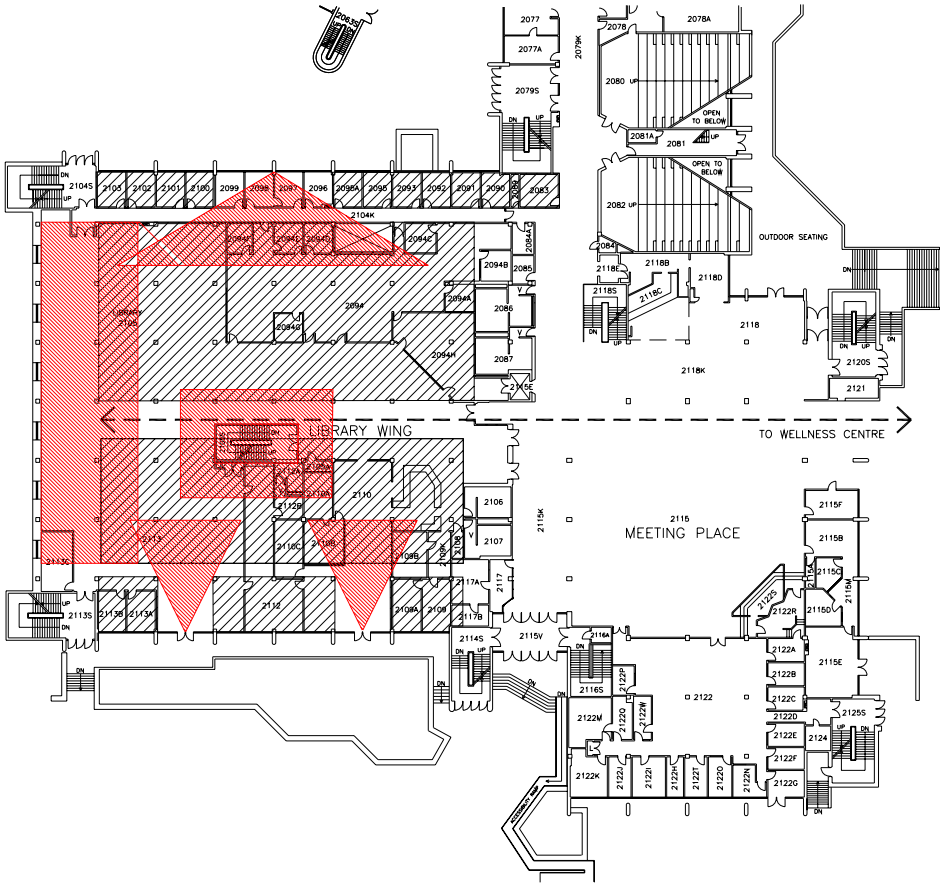


Figure D-2: Access to Light

Figure D-2 demonstrates the means by which natural light may be maximized through the strategic positioning of open office or public spaces around the circumference of the building and through the introduction of a skylight element at the centre of the structure.

Views should also be given consideration when planning the occupancy of this area. In particular, the view to the south overlooks the pond. The opportunity to maximize this elevation for public spaces should not be missed. Secondary views to the north and west should also be given consideration. Following the example in Figure D-2, views may be maximized for more people by opening up the window wall to common functions.

Horizontal Connection
Connection at all levels poses interesting possibilities in terms of consolidating and better utilizing existing spaces. The current main level of the library connects directly to the Meeting Place – the metaphorical "town square". This is a vibrant, open space where students, staff, and faculty can meet, eat, and converse; furthermore, several major student services can be accessed off of the Meeting Place, including the Registrar's Office and a food court. The Wellness Centre, currently under construction, will connect into the Meeting Space, further enlivening this central gathering area. Because of the proximity of vacated spaces to this hub of activity, certain natural occupants may be identified for occupancy here.

The current second level of the library physically connects with the corridor wrapping the Meeting Place atrium, around which much of the key administrative space is housed. Again, proximity to key administrative spaces may lead to certain synergies of occupancy in the adjacent vacated spaces.

Structure
A study of the structural capacity of the existing building will be necessary to determine how additional floor(s) may be added to increase the useable space in this location. The library was built with extra capacity to hold compact shelving which has never been installed. Based on preliminary discussions, it is reasonable to believe that sufficient capacity has been built into the original structure to allow for the addition of one or more floor levels.

Mechanical Capacity
Mechanical systems, life safety, and code compliance will need to be reviewed to assess any modifications necessary for a change of use. Preliminary discussions with users of the current space have revealed uneven heating/cooling in main level offices and noisy mechanical systems at the second level.

Functional Plan

- Main Level – At the main level, the opportunity to connect to the Wellness Centre (currently under construction) through the Meeting Place and to the newly available spaces requires careful thought around the specific uses allocated to this level. UTM is considering the consolidation of student services here, which would allow for a seamless transition from open student facilities and provide a critical mass of functions in one easily accessed location. The relocation of some of these functions from their current locations would, as a secondary effect, free up space to accommodate academic and administrative functions on other levels.
- Lower Levels (first and basement). A small amount of space is currently occupied by library study and computing functions on the first level and storage is located in the basement.

- Upper (Third) Level. Proximity to existing administrative space would naturally allow for the enhancement of administrative and academic functions on this level.

Recommendations/Guiding Principles

The above discussion may be distilled into several recommendations or guiding principles that will help to inform an appropriate plan for future occupancy of the library space. These recommendations/guiding principles are as follows:

1. Open up the perimeter spaces for public functions to provide access to light into the core of the wing and allow views to surrounding areas.

2. Maximize adjacencies of use through the consideration of horizontal functionality and programming.

3. Work within the existing infrastructure of mechanical and structural systems.

4. Consider all spaces in the library wing, including those not serving library functions, when planning and programming the future use of the South Building west wing.

5. Introduce additional non-assignable space in the form of corridors to form a useable grid of spaces to accommodate academic facilities.