

**REPORT OF THE PROJECT COMMITTEE
FOR THE ACADEMIC LEARNING CENTRE
AT THE UNIVERSITY OF TORONTO AT
MISSISSAUGA**

September 5, 2003

TABLE OF CONTENTS

I.	EXECUTIVE SUMMARY	1
II.	MEMBERSHIP	2
III.	TERMS OF REFERENCE	3
IV.	BACKGROUND INFORMATION	3
V.	STATEMENT OF ACADEMIC PLAN	5
VI.	SPACE PROGRAM	7
VII.	FUNCTIONAL PLAN	16
VIII.	ENVIRONMENTAL AND SITE CONSIDERATIONS	18
IX.	SPECIAL CONSIDERATIONS AND SECONDARY EFFECTS	19
X.	RESOURCE IMPLICATIONS	22
XI.	FUNDING SOURCES	23
XII.	SCHEDULE	23
XIII.	RECOMMENDATIONS	23
	APPENDICES	24
	1. Current Space Inventory Assigned for Library Activities	
	2. Enrolment Growth Projections UTM June 2003	
	3. Academic Learning Centre Summary Space Program	
	4. Total Project Cost Estimate	
	5. Estimated Cost of Furniture, Fittings and Equipment	
	6. Cash Flow Analysis	
	7. Room Specifications (available on request)	

**REPORT OF THE PROJECT COMMITTEE
FOR THE ACADEMIC LEARNING CENTRE
AT THE UNIVERSITY OF TORONTO AT MISSISSAUGA**

I. EXECUTIVE SUMMARY

The Erindale College Library was initially located in the North Building when the College was founded in 1967. In May 1973 new Library facilities were made available in the South Building. At the time it was built, this was a modern library space that was developed to serve the needs of primarily undergraduate students. Faculty and graduate students were expected to use resources at the St. George campus. By 1986, collections space in the library was at 100% working capacity and operating constraints became critical, exacerbated by the introduction of technology-based, end-user services, including a computing lab. Enrolment growth at the UTM campus is projected to be 88% over 2000/01. This will increase the current space constraints for study space, services, collections and staff. There is also a need to provide library service to faculty and graduate students as this complement of users grows on this campus spurred by enrolment growth and tri-campus academic restructuring.

Against this backdrop of enrolment growth, the changing nature of academic library service is having a profound impact on the nature and use of library resources and the needs of library users. Due to the complexities and vastness of electronic resources, there is an increasing need for librarians to teach the effective and appropriate use of these resources to equip students for their academic careers and prepare them for life long learning in a knowledge-based society. The new Academic Learning Centre/Library will provide technology-based, integrated teaching and learning space in support of this academic mission. There is also increasing demand to assist faculty and graduate students in their use of instructional, web-based courseware to meet the needs of today's students and those of distance education.

Study space to accommodate enrolment growth is a critical issue at the UTM campus. The new Academic Learning Centre/Library will provide an increase of 70% in study stations from the current facility. This includes study space equipped with network accessible computers available for extended hours and group study space to respond to collaborative learning and curriculae. The UTM Library is now an extremely busy facility with exit counts exceeding 100,000 per month during the core academic period, totalling over 838,000 exits for 2002/03. These exit counts rival those of the Gerstein Science Information Centre.

Collections space is currently at 119% capacity, space for technology-based services necessary for the effective provision of current library services is minimal, and staff space is both cramped and inefficient. Approximately 60% of library space including the main collection and computing lab is inaccessible to mobility impaired users without staff assistance. This situation can not be improved within the existing area of the library without further reducing study space

The new Academic Learning Centre/Library must be a place where technology is humanized and users obtain the necessary assistance required to gain access to and use electronic resources. It must be a dynamic, accessible, flexible, people-oriented place with staff committed to the provision of expert, proactive and convenient services. It must be a place to which users are drawn and once there, a place they want to spend countless hours because of the nature of the facility. The new Academic Learning Centre/Library must emphasize 'people-space' over 'collections space' through the quality of its physical environment. The functional design of the

new facility must reflect the necessary services for current and future library use, critical to the success of the Academic Learning Centre/Library's mission.

The new library, the Academic Learning Centre, is planned to be located adjacent to the Communications, Culture and Information Technology Building on the site identified in the UTM Master Plan. A total of 5317 net assignable square metres or 9173 gross square metres will be built. The new facilities will increase the library space allocation by approximately 28%, primarily study space bringing together a variety of electronic resources, software suites and specialized programs of many varieties to meet requirements of the academic program. The monograph and serial collections will be housed in compact shelving providing space for an expanded collection to the year 2021. The facility is planned to be available over extended hours and will be designed to provide an inclusive environment for all users. It will be designed to address accessibility concerns. A new Adaptive Technology Room will provide support for students with disabilities and become a test and examinations site for the Accessibility Resource Centre.

The site of the Academic Learning Centre will displace 349 parking spaces. Parking will be available on surface parking lots, in other campus locations and the new parking garage immediately adjacent to the ALC.

The relocation of the library to new facilities will make approximately 4160 nasm available for other purposes. The availability of this space is critical to accommodate faculty and teaching facilities necessary to meet the needs of enrolment growth at UTM. A separate project committee will identify renovations necessary to this area. The costs associated with these renovations are excluded from this report and funding will be from other budgetary allocations at UTM.

The total project cost of the Academic Learning Centre has been estimated to be \$34,000,000. Funding for the project has been made available by the Superbuild 2002 allocation, the Enrolment Growth Fund and the Students' Library Enhancement Fund.

The budget allows for a stand alone building for mechanical services with electrical services being made available from the Campus System. In the event that upgrades are required to this system, UTM has funds set aside and will handle the infrastructure component as a separate project.

Project financing assumes the Superbuild funds will be available in the fall of 2003. It is estimated that the operating costs of the new building will be approximately \$600,000 in 2006 when it is scheduled to open. Thus the annual yearly budget of UTM, will be increased by approximately \$600,000.

The construction schedule allows for completion by April 2006 to permit an opening date for a fully functioning facility in September 2006.

II. COMMITTEE MEMBERSHIP

Ms. Mary Ann Mavrinac (Chief Librarian, UTM), Chair
 Professor Sidney Aster (Department of History, UTM)
 Mr. Julian Binks (Capital Projects, U of T)
 Professor John Browne (Office of the Provost, U of T to Nov. 2001)
 Ms. Lois Chan (Undergraduate Student, UTM from March 2003)

Ms. Seema Chawla (Undergraduate Student, UTM to Nov. 2001)
 Mr. Sol Kessler (Director, Facility Resource, UTM)
 Mr. Adil Mirza (Undergraduate Student, UTM from March 2003)
 Mr. Joe Lim (Manager, Computing Services, UTM)
 Professor John Percy (Department of Astronomy, UTM)
 Ms. June Seel (Reference/Systems Librarian, UTM) - Secretary
 Ms. Elizabeth Sisam (Director, Campus and Facilities Planning, U of T)
 Professor David Smith (Department of Anthropology, UTM)
 Mr. Christian Szabo (Undergraduate Student, to Nov. 2001)
 Ms. April Wong (Graduate Student, UTM from March 2003)

III. TERMS OF REFERENCE

1. Make recommendations for a detailed space program and functional layout for a new Library Building at the University of Toronto at Mississauga.
2. Identify the space program as it is related to the existing and planned enrolment targets, academic and staff complement plans, and other changes associated with the University's plans for growth on the Mississauga campus.
3. Demonstrate that the space program will take into account the Council of Ontario Universities Building Blocks Space Formula and the University of Toronto space standards.
4. Identify the equipment and moveable furnishings necessary for the building and its services.
5. Identify all requirements for data and voice communications and their associated costs.
6. Identify a site for the Library Building in accordance with the Master Plan for the University of Toronto at Mississauga.
7. Identify all secondary effects, and their associated costs, including existing space that will be released as a result of this project and any proposed modifications required for its reuse and requirements for staging of facilities during the course of construction.
8. Provide a total project cost estimate which identifies all resource implications, including a capital cost estimate and projected increases to the annual operating cost of the University.
9. Identify funding sources for the project.
10. Report by November 13, 2001.

IV. BACKGROUND INFORMATION

The Erindale College Library, hereafter referred to as the Academic Learning Centre/Library, opened in the South Building when it was built in May 1973. The library was initially located in the North Building when the College was founded in 1967. At the time it was built, this was a modern library space that was developed to serve the needs of primarily undergraduate students. Faculty and graduate students were expected to use resources at the St. George campus. By 1986, collections space in the library was at 100% working capacity and operating constraints became critical, exacerbated by the introduction of technology-based, end-user services, including a computing lab.

Collections space is currently at 119% capacity, space for technology-based services necessary for the effective provision of current library services is minimal, and staff space is both cramped and inefficient. Additionally, approximately 60% of library space is inaccessible to mobility impaired users without staff assistance including the main collection and computing lab. Any significant move to address this situation will further erode study space, which does not meet the needs of the current population in quality and amount much less with the projected enrolment growth. The main floor of the library was renovated in 1993, but no measure of internal renovation can address the critical space issues that are currently being experienced. Numerous studies have detailed these issues, the most recent being the *Erindale College Library Self Study* (June 2000) and the *University of Toronto at Mississauga Library External Review* (June 12, 2000.)

Against this backdrop, the changing nature of academic library service is having a profound impact on the nature and use of library resources and the needs of library users. The ubiquity of the World Wide Web, electronic publishing, broadband transmission of multi-media, portable computing and library technology, in combination, are re-shaping the delivery of library services from a storage function and research service, to additionally and increasingly, a teaching function and a gateway to global information function. Academic libraries have traditionally served the research and teaching mission of the university. Now, due to the complexities and vastness of electronic resources, there is an increasing need for librarians to teach the effective and appropriate use of these resources to equip students for their academic careers and prepare them for life long learning in a knowledge-based society. The new Academic Learning Centre/Library must provide technology-based, integrated teaching and learning space in support of this academic mission.

The new Academic Learning Centre/Library must straddle the past and embrace the future in serving the needs of faculty, staff and students at the University of Toronto at Mississauga, supporting technology-based services both general and specialized with the technological infrastructure for a ubiquitous computing environment and providing space for its valuable current and future print collection resources. Given the pace of technological change, the new library must be designed to be scalable, flexible and modular to accommodate future, unforeseen developments, particularly in the area of technology-based services.

There is a need for increased study space to accommodate enrolment growth at the UTM campus. This requirement includes study space equipped with network accessible computers available for extended hours and collaborative, group study space to respond to collaborative learning and curriculae. The UTM Library is now an extremely busy facility with exit counts exceeding 100,000 per month during the core academic period, totalling over 838,000 exits for 2002/03. These exit counts rival those of the Gerstein Science Information Centre.

The new Academic Learning Centre/Library will be no longer solely an undergraduate library. There is a need to provide library service to faculty and graduate students as this complement of users grows on this campus spurred by enrolment growth and tri-campus academic restructuring. There is a critical demand to assist faculty and graduate students in their use of instructional, web-based courseware to meet the needs of today's students and those of distance education.

The new Academic Learning Centre/Library must be a place where technology is humanized and users obtain the necessary assistance required to gain access to and use electronic resources. It must be a dynamic, flexible, people-oriented place with staff committed to the provision of expert, proactive and convenient services. It must be a place to which users are drawn and once there, a place they want to spend countless hours because of the nature of the facility. The new Academic Learning Centre/Library must emphasize 'people-space' over 'collections space' through the quality of its physical environment. The functional design of the new facility must reflect the necessary services for current and future library use, critical to the success of the Academic Learning Centre's mission.

V. STATEMENT OF ACADEMIC PLAN

The purposes to be served by the proposed new Academic Learning Centre are:

- to address current critical space issues for users, collections, services and staff.
- to provide a variety of study space options to accommodate an increase in enrolment. (Note: projections now are confirmed at 88%.)
- to be accessible.
- to provide the necessary technological infrastructure and computing resources to meet user need for current and future library services.
- to provide facilities in support of teaching research and information literacy skills, pedagogical and web-based course development and specialized services.
- to collaborate with other academic and non-academic programs in the provision of services to meet the research and teaching needs of faculty and students.
- to design a flexible, scalable, modular library building to allow for unanticipated future development and change in library services and technology.
- to create a physical environment that is accessible, comfortable, welcoming, convenient, safe, and ergonomically and environmentally sound to attract members of the UTM community and beyond for intellectual, research and creative purpose and exchange.

The facilities and services of a new Academic Learning Centre/Library have been and will continue to be discussed within the context of the following plans:

1. University of Toronto at Mississauga Master Plan (June 1, 2000)

Within the context of the UTM Master Plan, it was recognized that the space constraints in the existing library, and in turn, the amount of space necessary for 50% enrolment growth required additional library space. A site was selected, taking into account the need to locate the library in a central location to serve the three academic divisions at UTM, the importance of an accessible location, the opportunities for synergies and partnerships with other academic and non-academic programs, placement in a high traffic area that is proximate to use of various modes of transportation and the need for basic physical infrastructures necessary for housing collections and providing technology based services.

2. “Raising Our Sights: An Expansion Plan 2004, University of Toronto at Mississauga, Erindale College (August 2001)

In this planning document the library is discussed in the context of improving the delivery of academic programs and the need for a new physical space to accommodate user, collections, service and staff. The plan discusses the introduction of an “Academic Learning Centre” (Information Commons) to provide the technological infrastructure, physical design and staffing expertise for an integrated learning environment in support of student, faculty and staff research and teaching; a Centre for Academic Technology Development in support of the use of emerging technologies in teaching, learning and research for faculty and graduate students; and an expansion of the Information Literacy Program, providing facilities for teaching information literacy skills.

3. University of Toronto Report on the Task Force on Academic Computing and the New Media (April 20, 2000)

The plans for the new Academic Learning Centre/Library follow the model outlined in this Task Force Report, including the provision of an academic commons, information commons and digital and print library services. The Report supports the concept that information literacy is an essential skill; that connectivity to computing and information resources for students who do not live on campus is important; and that the infrastructure to support portable computing, both wired and wireless, is increasingly important. Plans for the new Academic Learning Centre/Library include all of these elements.

4. University of Toronto Report of the Task Force on Technology-Assisted Education (September, 2001)

This report stresses the need for the University to endorse and invest in technology-assisted education through expanded use of course websites for communication and course delivery because these technologies are part of the learning context of higher education in the 21st century. Plans for a new Academic Learning Centre/Library at UTM are in sync with the recommendations in this draft report, specifically through the Centre for Academic Technology Development where faculty and graduate students will be provided with technical and pedagogical support in their development of technology-based teaching.

VI. SPACE PROGRAM

1. Overview of Existing Space

The current UTM Library occupies approximately 4,100 net assignable square metres (nasm) in the South Building. Prior to 1993, the library occupied approximately 3,600 nasm, but a renovation in that year resulted in additional space on Floor 1. In addition, there is approximately 360 nasm of study space outside of the library.

Space Category	Study Stns 02/03	Nasm 02/03
Library Collection Space		1,901
Library Traditional Study Space	571	1223
Library Student Computing	67	190
Library Support		824
Total Library	638	4,138
Other Traditional Study Space	185	251
Other Computing Study Space	46	111
Total Other	231	362
Total Campus Library and Study	869	4,500

A detailed space inventory of the existing facilities can be found in Appendix 1.

Library Collection Space: in 2001/02 was 57% of the COU standard which is based on 125 volumes per shelving unit. The UTM Library has between 135 and 150 volumes per shelving unit. The collection is currently 119% capacity. Library collections should be at 75-80% capacity in order to provide satisfactory access to and maintenance of the collection. Accessibility is a serious issue. Mobility impaired users cannot independently gain access to Floor 3 where the main circulating and serials collections are located. The COU Ontario system average is at 62%.

Study Space: in 2001/02 was 73% of the COU standard. This includes study spaces, traditional and computing, both within the Library and located in facilities not under Library control. Study spaces, in the Library, have decreased from over 700 spaces when the building opened to 571 spaces in 2001, with computing workstations accounting for an additional 67 spaces. To retain this number, study spaces were essentially crammed into the available space when collections and technology encroached, in particular in 1993 when a renovation occurred. Again, accessibility is a serious issue. Mobility impaired users cannot independently gain access to Floors 1 and 3 where group and individual study space are located. The COU Ontario system average is also at 73%.

Library Support: includes staff space and service areas. The UTM Library in 2001/02 was 55% the COU standard. Staff space deficiencies are exacerbated with growth where new positions place strain on an already cramped work area. The COU Ontario system average is at 71%.

Computing Lab: there are not enough public computing workstations to provide the access required by UTM students. Increased availability of electronic resources is driving this demand, causing waiting periods during most of the academic year. Librarians use the Computing Lab for the Instructional Program, causing users to be dislodged when teaching occurs.

2. Nominal Space Allocation Required

To determine the nominal space allocation required, a space utilization analysis, using the Council of Ontario Universities space standards and the internal university guidelines was conducted. The analysis was based on the following profile:

Library Profile, 2000/01 – 2010/11

FTE Students	00/01	Current 02/03	Projected 03/04	Projected 2010/11
FTE U/G Students	4,818	5,657	6,535	9,014
FTE Grad Students	178	233	305	380
Total FTE Students	4,996	5,890	6,840	9,394
<i>% Growth over 00/01</i>		17.9%	36.9%	88%
<i>% Growth over 02/03</i>			16%	59%

FTE U/G Student # includes CCIT students physically present at Sheridan, approximately 480 in steady state

FTE Library Staff	00/01	03/04	10/11
Librarians	9.92	11.00	13.00
Library Technicians	16.14	22.03	24.14
Secretary	1.00	1.00	1.00
	27.06	34.03	38.14
<i>% Growth over 00/01</i>		25.8%	41%

Volume Counts and Projections	00/01	Current 02/03	Projected 2010/11	Projected 2020/21
Monographs	155,155	165,205	204,655	252,980
Reference	29,792	30,792	24,000	15,000
Serials Volumes	138,542	145,492	168,074	177,041
Total Volumes	323,489	341,489	396,729	445,021
<i>% Growth over 00/01</i>		5.6%	23%	38%
<i>% Growth over 02/03</i>			16%	30%

The UTM Library is part of the University of Toronto Library system. In this capacity it is available for use by the entire University community, including undergraduate students, graduate students, faculty and staff from all areas. The facility is used extensively by undergraduate students enrolled at the St. George campus but residing in Mississauga and Oakville. It is also used by large numbers of area high school students, in particular during evening and weekend hours.

The proposed new Academic Learning Centre/Library provides for an increase in space of 28% or 1,156 nasm totalling 5,317 nasm in size. The project budget of \$34M was met through careful and efficient planning which protected the overall integrity of the original vision: “people space over collections space.” Effectively, the new Academic Learning Centre/Library will rectify serious existing space constraints in housing the collection, accommodate an additional 30% growth in library collections through the use of compact shelving, increase support space by 27% and increase the number of study stations by 70%.

Space Category	Study Stns 02/03	Nasm 02/03	Study Stns Proposed	Nasm Proposed
Library Collection Space		1,901		1,891
Library Traditional Study Space	571	1223	928	1,646
Library Student Computing	67	190	161	511
Library Support		824		1,049
Total Library	638	4,138	1,089	5,097
Library Café				100
Academic Skills Centre				120
Total ALC Project				5,317

Comparison of Proposed Space Programme to Existing Library Facilities

After analysis of the literature and review of peer buildings it was determined that a gross to net assignable square metres (nasm) ratio of 1.65 would be appropriate for this building. The gross area includes all required program space (nasm) including non-programmed space such as circulation, washrooms, utility rooms, penthouse etc. On the program of 5317 nasm this results in a gross area of 8,773 gsm for a stand-alone building. To this an allowance of an additional 400 gsm has been added to allow for the link to the CCIT building and some further circulation/lobby space, bringing the total maximum area of the new construction up to 9,173 gsm.

Proposed Space Program

The proposed space program can be found in Appendix 3. Descriptions of various elements follow:

Space Program Summary

Study Space 2,157 nasm

Use of study space in academic libraries has changed over the years with an increase in demand for group study space in support of collaborative learning and project work.

There is also an increase in the number of requests for extended hours for study purposes. Despite the high demand for group space, users often gravitate to quiet individual study space.

The quality of library study space is very important and a critical determiner of use. The library needs to provide a comfortable, attractive, safe, quiet and technological environment. Feedback from library users during the library project planning period indicated a demand for quiet study space, public computing workstations, extended study space hours and group study areas, including rooms. UTM is largely a commuter campus comprised of a diverse student population. This population see the library as the only acceptable after hours study space on campus.

The enrolment growth projection at the UTM campus, for 2010/11, is 9,394 FTE students, including 9,014 undergraduates (of which approximately 480 CCIT students will be physically located at Sheridan) and 380 graduate students. In 2000/01 there were 4,996 FTE students, including 178 graduate students. This would be an 88% increase in student enrolment

There are currently 571 study spaces in the UTM Library, plus an additional 67 at computing workstations. There are also 231 study stations outside of the library, for a total of 869. This space programme proposes that the new Academic Learning Centre/Library have 1,089 study spaces, including computing workstations. In addition there will continue to be study spaces located outside of the library.

	Study Stns 02/03	Proposed Including ALC and CCIT
ALC Traditional Study Space	571	928
ALC Computing Study Space	67	161
Total Library	638	1,089
Other Traditional Study Space	185	185
Other Computing Study Space	46	121
Total Other	231	306
Total Campus Library and Study Stns	869	1,395

The COU formula recommends study spaces for 25% of the undergraduate population and a slightly higher percentage for the graduate population. (It also assumes that the average study station size is 1.85 nasm.) In fact the post-secondary institutions in Ontario only have been able to supply far fewer spaces: in 2001/02 the system was at 61% of the formula for space for study. The space programme for the Academic Learning Centre, as well as the continued use of study spaces outside of the library, will allow for 59% of the COU formula for study spaces at steady state. This is in keeping with system averages over the years. UTM will have to create more study spaces in new academic buildings or in an existing building being renovated. As is shown in the table below, without a new Academic Learning Centre/Library, this figure will drop to 41%.

**Projected FTE – as of June 19, 2003
And Impact on Study Stations**

	(A) Projected FTE includes students physically present at Sheridan	(B) # Stns. For 25% of FTE	(C) Actual & Proposed Study Stations	(D) % With the ALC	(E) % Without the ALC
2000/01	4,996	1,249	969	78%	78%
2001/02	5,214	1,304	969	74%	74%
2002/03	5,890	1,473	969	66%	66%
2003/04	6,840	1,710	869	51%	57%
2004/05	7,635	1,909	869	46%	51%
2005/06	8,384	2,096	1,395	67%	46%
2006/07	9,266	2,317	1,395	60%	42%
2007/08	9,363	2,341	1,395	60%	41%
2008/09	9,440	2,360	1,395	59%	41%
2009/10	9,423	2,356	1,395	59%	41%
2010/11	9,394	2,349	1,395	59%	41%

It is recommended that of the 1,089 study spaces in the ALC:

- 60% be assigned as individual spaces
- 40% be assigned as group study space
- each study space have access to data and power, either wired or wireless.
- the quality of the furnishings and environment be of a high standard to ensure that users will be comfortable and will want to use the library for extended periods.

The following components of the study space program take into account the trends in academic library use, characteristics of the UTM student population, feedback from UTM students, and enrolment projections.

Academic Learning Centre

The Academic Learning Centre is an integrated teaching/learning space which brings together a variety of electronic resources for research and writing, including access to scholarly electronic resources and the World Wide Web, software suites and some specialized programs. It is recommended that the Academic Learning Centre include 153 networked accessible workstations, 45 of which are located in two Research and Instruction Centres, one accommodating 30 users and the second 15 users. There will also be 4 audio-visual workstations with seating for 8. The Academic Learning Centre, located on the Ground and Main Floors, will be accessible for extended hours of service beyond regular library hours. Included in this area will be quiet, individual study space.

The extended use study area will include infrastructure for security, such as camera surveillance, emergency phones and staff support.

The Research and Instruction Centres should be designed for flexibility and multiple purpose, with the two rooms adjacent to one another and separated by an acoustical panel that can be opened to expand into one large facility that will accommodate 45 students. Use of the rooms will include individual study, teaching activities in support of the Library's research and instruction program, including labs for the ½ credit course "Introduction to Scholarly Research", use by the Academic Skills Centre staff and by faculty to gauge the effectiveness of the web-based courseware they have developed. This should result in close to 100% use of the Research and Instruction Centres during the September to April period.

Individual Study

It is recommended that there be 466 individual study spaces comprising 369 individual carrels and 97 lounge chairs. Most of the carrel and lounge chair space would be designated as quiet study space.

Group Study

It is recommended that there be 432 group study spaces with 108 spaces allotted to 19 group study rooms. This doubles the number of existing group study rooms. These rooms should be separated with impermanent walls (e.g. mountable partitions) for future flexibility, have windows for security and have acoustically suitable flooring and walls. It is recommended that the remaining 324 group study spaces be assigned to tables seating 4 people each, totalling 81 tables.

A summary of the recommended study spaces in the Academic Learning Centre is as follows:

	# Stns	Space Factor	NASM
Table Seating, 4 per	324	1.49	481.95
Study Rooms, 6,4 per	108	2.15	231.78
Individual Carrels	369	2.19	807.28
Lounge Chairs	127	1.29	125.29
Desktop Computers	116	2.80	341.75
Computer Instruction	45	3.75	168.75
Total	1089	2.03	2,159.96

The COU space formula for study space assumes 1.85 per station. This space programme proposes an average of 2.03 nasm per station because of the increased use of computers and multimedia workstations and group study rooms, introduction of computer instruction, and shift in emphasis from lounge seating to quiet study carrels and group study tables.

Library Collection Space

Trends in academic publishing point to a future where the use of electronic publications outstrips use of print publications. The University of Toronto Library currently subscribes to over 20,000 electronic journals. The University of Toronto Library Plan 2000-2004

indicates that the electronic delivery of materials will account for 50% of overall usage by 2005, and that print scholarly resources will begin to decline. (University of Toronto Library Plan 2000-2004, pg. 19) Users will typically opt for an electronic journal over a print journal because it is convenient. Increasingly, journal publishers will cease to produce print versions as the cost of producing both formats will be no longer sustainable. The following collections space program acknowledges the value and importance of print publications but takes into account the trends in use of electronic resources. This program also assumes that at some point in the future there will be a tri-campus storage facility for the University of Toronto Library, thus supporting growth of the print collection beyond the 2021 projections for this space program. In designing a library for the 21st century, it is imperative that collections space be designed so that this space can be used for a different purpose in the future.

It is recommended that all collections space include the infrastructure for access to power and data communications and use of compact shelving, including load bearing floors of 250 pounds per square foot and the appropriate ceiling height to accommodate this type of shelving.

Currently, most of the collections space in the UTM Library is situated on Floor 3 with monographic, serial and government document material interfiled. It is recommended that the serial collection be split from the monographic collection, be placed on low use accessible compact shelving and be located on the Ground Floor in recognition that, over time, this space may be liberated for other purposes in light of the increasing use of electronic resources. It is further recommended that the monographic collection be placed on moderate use accessible compact shelving and be divided over two upper floors.

Compact Shelving - Monographs – 856.60 nasm

Collections projections for monographic material (including books, government documents, videos) to the year 2021 amount to 252,980 volumes. This collection will be placed on mechanical assist compact shelving designed for moderate to high use.

Compact Shelving - Serials – 751.00 nasm

Collections projections for serial publications to the year 2021 amount to 177,041 volumes. This collection will be placed on mechanical assist compact shelving designed for moderate use.

Reference Collection - 128.76 nasm

Collections projections for reference material to the year 2021 will decrease to 15,000 volumes from the current size of 25,000 due to increased publication of material in electronic form. This collection will be placed on compact shelving designed for moderate use.

Current Serials - 55.19 nasm

It is anticipated that the use of much of this space will change over time as serial publications are increasingly available in electronic form.

Recreational Reading Area - 22.00 nasm

The UTM Library currently has a recreational reading area called “Novelties” equipped with free-standing book shelves, six lounge chairs and two coffee tables.

Microforms - 20.71 nasm

This collection includes microforms and reader equipment. This is a steady space collection, with no growth anticipated beyond 2006/07.

Maps - 17.11 nasm

This collection is at a steady state and will not grow.

Archives – 40.00 nasm

It is recommended that the Archives be modestly expanded to accommodate future growth, to provide work space for research and to provide networked access to digitized archival documents.

Library Support

Libraries of the 21st century are highly technological and increasingly they are providing specialized services to meet the technological needs of library users. The following program which follows outlines an integrated approach to library service where users can obtain assistance on research and technical questions, obtain specialized services on GIS/Data resources and web-based instructional courseware, and assistance with pedagogy and learning styles through the Academic Skills Centre.

Welcome Area – 20.00 nasm

The Welcome Area, at the main entrance to the building, located to the north west, will provide a transition zone between the exterior and interior of the building for library users to get their bearings, obtain information and to gather. This location will be light and airy, allow for crush space of at least 75 people, provide basic services such as pay telephones and display boards/cases, and be contiguous with the Library Café. The Welcome Area will be outside library security. Particular attention must be paid to the flow between the Welcome Area and the entrance to the library, and in turn, that this entrance be designed so users immediately see where they would gain access to most of the major library services and access to the Ground and upper floors. Additionally, this area will be connected to the CCIT by a pedestrian link that should offer views to the courtyard.

Library Café – 100.00 nasm

A small library café is proposed to provide a convenient service where users can relax or meet colleagues. The library café is an important service component in defining the 'library as place' to emphasize people-oriented services in a comfortable setting. Café furnishings and design will accentuate the function of serving food and beverages, without encouraging use of this space for study purposes. The Library Café should be positioned outside of library security, contiguous with the Welcome Area and accessible to the "Link" to be well placed to contribute to the Food Service operations at the UTM campus. This area is to be visible from the entrance and will be part of the general entrance/waiting space.

Information/Circulation/Reserves Desk – 50.00 nasm

A combined Information/Circulation/Reserves Desk will be located within library security and within sight of the main entrance to ensure users will clearly see where they might ask for assistance. This desk will support functions such as the provision of information and the pick-up and return of materials. Two self-checkout machines are

recommended, one to be located across from the Circulation Desk, the other on the upper floor within the monographic collection.

Reserves Room - 57.50 nasm

Adjacent to and serviced by the Circulation Desk is an enclosed, secure Reserves Room including two workstations (as part of the Academic Learning Centre), 8 lounge chairs and the short term Reserves Collection.

Reference/Help Desk - 15.00 nasm

The Reference/Help Desk, equipped with three workstations (one wheel chair accessible) for the provision of research, reference and technical assistance will be located in the Academic Learning Centre. Two workstations in the Academic Learning Centre that are adjacent to the Reference/Help Desk will be used to provide impromptu small group instruction. It is anticipated that a portion of reference and technical assistance will be provided using 'chat technology'.

Adaptive Technology Room - 46.00 nasm

The Adaptive Technology Room supports students with disabilities providing a secure, quiet location equipped with five workstations with voice recognition technology and one station with Smartview CCTV. This room will be used for study and research if specific accommodation not available in the library is required (e.g. nurses bed, slanted accessible desk), due to a disability (e.g. Tourette syndrome, cystic fibrosis), and for a test and examination site for the *AccessAbility* Resource Centre.

Academic Skills Centre – 120.00 nasm

The Academic Skills Centre will be re-located to the new Academic Learning Centre/Library to provide convenient access for students and faculty for their teaching and learning needs in an integrated learning environment. This space includes private and peer mentor office space.

Technology Centre - 67.88 nasm

The Technology Centre includes specialized equipment for the Centre for Academic Technology Development (CATD) and Geographical Information Systems (GIS). The CATD is equipped with two computing workstations to support the increasing use of web, multi media and digital courseware by faculty. In partnership with staff and faculty from the Academic Skills Centre, Computing Services and Micro Electronics, software, hardware, technical and pedagogical support will be provided by one professional librarian, Academic Skills Centre staff and a computer technician. A significant component of the CATD's mandate will be the provision of technology-based programming provided up to now at the St. George campus, through the Resource Centre for Academic Technology.

The CATD differs in terms of its mandate from the Multimedia Centre in the CCIT (Communications, Culture and Information Technology) program. Where the Multimedia Centre supports the research and teaching activities of the CCIT program, including applied use by undergraduate students, the CATD's mandate is to support faculty development across the academic divisions at UTM. The CATD also has a strong programmatic component. Despite these differences, the two facilities are complementary and much needed in view of the growing trend in the use technology-based courseware and distance education.

Currently, there is one GIS workstation in the UTM Library and a second is planned. One professional librarian position is allocated to the provision of this service. The GIS and Data Centre will be equipped with three workstations. The use and manipulation of raw electronic data produced by government and non-governmental sources to create spatial, tabular and graphical images are increasingly part of the research and curriculum in several academic disciplines at UTM, in particular Geography, Anthropology and Sociology.

Office Space

The following office space requirements are needed for the staffing complement detailed in the academic plan, *“Raising Our Sights: An Expansion Plan 2004* (University of Toronto at Mississauga, Erindale College, August 2001.)

Chief Librarian – 38.00 nasm

The office of the Chief Librarian includes office space for reception, secretarial assistance and equipment.

Professional Librarian Office Space - 138 nasm

There are currently 10 full time librarians, each with an individual office. Two additional librarian appointments are required to support the library programs because of the increase in enrolment. It is recommended that the new UTM Library include 12 private offices.

Non-Academic Support Staff - 278.8 nasm

There are currently 21 library technicians. There will be 3 new technician appointments.

Staff Room - 66.20 nasm

There is currently a Staff Room in the UTM Library. It is recommended that a similar facility be included in the new Academic Learning Centre/Library, equipped with a small kitchen and staff washroom facilities. The Staff Room should accommodate the entire UTM staff for use as a large group meeting room and reception venue.

Meeting/Conference Room - 27.80 nasm

It is recommended that the new UTM Library include a staff meeting room to accommodate between 12 and 15 people and be located adjacent to the Staff Room.

Print/Copy Facilities - Public and Staff. - 55.05 nasm

Public Computer printing and photocopying

Storage Space – 32.00 nasm

It is recommended that there be two small storage rooms for the storage of computing equipment, files and printed material.

VII. FUNCTIONAL PLAN

The goal of the plan is to provide an integrated teaching/learning environment, where functional relationships are sound, seen through a user's eyes and activities are grouped according to function and level of noise. Users should be able to conveniently use services without impediment whether independently used or staff mediated. The functional plan, building design and type of furniture must accentuate access, appropriate level of activity, clear sight lines and convenience through natural and logical proximity.

It is anticipated there will be four floors in the new Academic Learning Centre/Library, including a Ground Floor partially below grade, each with areas of service emphases.

Ground Floor (1): *Teaching Space. Collections Space. Reading Room. Quiet and Group Study Space.*

The Ground Floor will be accessible through the Main Floor front entrance, with clear and identifiable access to the stairwell and elevator to this floor. The Ground Floor should be designed with perimeter windows to create the lower level with an abundance of natural light. Any openings between the Ground and Main Floors should be designed not to impede operations on the Main Floor. Access to the Ground Floor must be available during extended hours of service.

There is also to be clear access from the entrance of the Ground floor to the two Research and Instruction Centres, near by. Each room should be designed with wide entrance ways that can be left open for general use and accessibility when not in use for the purpose of teaching. There will be two Express Computer Workstations and a Copy/Print Centre within sight of the entrance. The Ground Floor will house the Serials Collection, adjacent to which will be the Serials Current Collection and a reading area equipped with lounge chairs and coffee tables. This reading area should be partially visible from the stairwell, and should be located adjacent to windows. Other program features of the Ground Floor include the Group Study Rooms and the Microform Collection, the latter away from quiet study and the serials reading area.

Main Floor (2): *Major access point. Main service area. Academic Learning Centre. Hub of activity.*

Access to the Academic Learning Centre/Library will occur on the Main Floor. It is conceived that as one walks further into the main floor, the level of activity and noise will decrease commensurate with an increase in the complexity of service provided. The main entrance area of the Library should be an open, welcoming, bright environment where users can get their bearings, meet colleagues and friends, and pause or seek assistance before proceeding into the Academic Learning Centre. Information and circulation of materials will occur in and around the main entrance/exit, with clear access to the stairs leading to the upper floors. Most of the Academic Learning Centre will comprise the Main Floor. Access to Floors 3 and 4 closed after regular hours of service allowing for extended hours of service on other floors. Adjacent or proximate to the Circulation Desk will be the Reserve Room. There should be clear sight lines and access to the Adaptive Technology Room on the Main Floor. Stand-up computing workstations will help demarcate the active front entrance area from the Academic Learning Centre, where the bulk of the computing workstations will be located near a Reference/Help Desk that is centrally situated. Adjacent to the Academic Learning Centre is the print Reference Collection. Paralleling, but behind the scenes, are staff offices which relate to these activities including Circulation, Reserves, Resource Sharing, Collections/Technical Services and Reference.

Floor 3: *Specialized services. Academic Skills Centre. Main Circulating Collection. Quiet Study Space.*

Floor 3 provides specialized services including the Technology Centre (GIS/Data Centre and Centre for Academic Technology Development) and the Academic Skills Centre. The Map Collection should be sited near the GIS and Data Centre. All of these services should be placed near the stairwell for clear sight lines and access. Supporting services such as Librarian offices, staff work areas and a server room will be located in this area. Group study tables should be adjacent as it is likely these functions will generate some level of noise. Four computing workstations for express purposes should be located in and around the stairwell. A significant amount of individual carrel study seating and a portion of lounge seating will be located on Floor 3 designated as quiet study space. The bulk of Floor 3 will include the main circulating collection of monographs and government publications continuing to Floor 4

Floor 4: *Main Circulating Collection. Quiet study space.*

The continuation of the main circulating collection of monographs and government publications will be located on Floor 4. In and around the stairwell will be a photocopy area, four computing workstations and a self-checkout workstation. 16 group study rooms with interior windows located away from the quiet study areas will be also accommodated. Adjacent to the main collection will be another significant portion of the individual carrel and lounge chair seating, again designated as quiet study. Accessible from the elevator will be the Staff Room and Staff Meeting Room. The remaining professional private offices will be located on Floor 4.

VIII. ENVIRONMENTAL IMPACT

The University of Toronto's commitment to the development and maintenance of strategies to enhance the campus and global environment is articulated in the *Environmental Protection Policy* (March 1994.) The *UTM Master Plan* details an environmental vision for the campus.

The design of the new Academic Learning Centre/Library will require special attention to energy needs as there will be high levels of computer use requiring a lot of energy and generating a significant amount of heat and noise. This is of particular importance in closed areas with a high concentration of computing equipment such as the Research and Instruction Centres, Technology Centre, and office space.

Other considerations to lessen the environmental impact in the construction and design of the new Academic Learning Centre/Library are to:

- maximize the use of natural energy through the design of building orientation, configuration and envelope for use and control of sunlight and natural ventilation
- minimize the use of energy for heating, cooling and lighting to encourage the use of equipment that requires lower energy levels for operation
- select energy efficient lighting, including task lighting in offices, work areas and study areas
- incorporate an energy efficient HVAC system with an emphasis on proper ventilation, air filtration and moderate, constant temperature and humidity
- conserve the use of water through the use of water saving fixtures and using water

- run-off for landscaping
- enhance air quality through choice of building finishes, furnishings and carpets
- emphasize acoustical control to minimize noise by using appropriate materials, flooring and furnishings, and through the functional layout
- select furniture that is durable, comfortable and ergonomically sound to ensure a long life
- maximize visual access to the outdoors, especially for study and office space
- provide a sufficient number of recycling bins in a convenient location
- have windows that open, where possible, especially in private offices
- reduce maintenance of landscaping.

Architects will be encouraged to evaluate building design through use of LEED (Leadership Energy and Environmental Design) performance criteria to achieve a LEED performance ranking.

IX. SPECIAL CONSIDERATIONS AND SECONDARY EFFECTS

Special Considerations

Accessibility

The Academic Learning Centre/Library must provide an inclusive environment that is accessible no matter the abilities of the user through interior way finding and sight lines, a functional and convenient layout, interior and exterior signage and clear access to other floors by stairs or elevators. Accessibility considerations include:

- door widths to accommodate wheelchairs and scooters
- automatic door openers on all entrances, exits and interior doors
- a unisex washroom
- a portion of the total computing workstation complement to be accessible, have 21" monitors and include accessibility software
- lowered counters at all service desks
- turning space for wheelchairs and scooters
- accessible height and use of 11"x17" paper on some photocopiers
- accessible passenger elevator to all floors of the library
- Assistive Listening System in the Research and Instruction Centres
- Visual Notification System to alert hearing impaired users to evacuate the building.

Design standards for buildings and facilities at the University of Toronto are provided to the architects and sub-consultants. A barrier free consultant should be included as an assessor to comment on the project during the Implementation Phase prior to completing final contract drawings.

UTM Master Plan

The UTM Master Plan sets out a vision for the campus to balance and harmonize natural and man-made elements. The vision includes the creation of a high quality learning environment that is conducive to intellectual exchange. It proposes to create a stronger sense of community through sensitive scaling and positioning of new buildings. It identifies a built form called a 'Main Link' which connects proposed buildings accommodates a variety of programmed activities and provides access to open areas. The Academic Learning Centre/Library is positioned as the second leg on the Main Link and the second courtyard space adjacent to the new Communications Culture and Information Technology Building (CCIT). Building materials and landscape elements should complement the CCIT and the vision within the UTM Master Plan. The building materials and finishes of the link from the CCIT should be extended to create a continuous route. The site work/landscaping for the South Court and North entrance/drop-area are part of the architect's commission.

Landscape Requirements

Landscape treatment corresponding to that articulated in the UTM Master Plan will be required all around the building, between the access roads to the East & West, and from the CCIT in the South to the ring road to the North.

Standards of Construction & Quality

Generally, the building will be of good quality, intended to last for many years. Structurally, the floors will be designed for 250 lbs/square foot to allow for the installation of compact shelving throughout the new facility.

Flexibility of Design

The exponential growth and changes wrought by technology have and will continue to have a strong impact on library services and use of the library. It is imperative that the new Academic Learning Centre/Library be designed for flexibility to extend the life of the building and avoid a major renovation or expansion, including:

- a minimum of load bearing walls
- use of a modular interior design
- HVAC systems which will support multiple and unanticipated functions
- load bearing floors to support compact shelving to shift and consolidate collections
- the technological infrastructure for a ubiquitous computing environment both wired and wireless
- a minimum of architectural 'statements' such as grand stairwells, open atria (except at the entrance), etc.

Safety and Security

The new Academic Learning Centre/Library will continue to be open seven days per week and until late in the evenings most days. The Ground and Main Floors will be accessible beyond regular hours and such, designated as "extended use" so that study space and computing resources are available after hours. The library is an extremely busy building, drawing users from the UTM campus, the St. George campus and the local community. It is critical that safety and

security be a design priority through clear sight lines to exits, open public areas, the choice of lighting and flooring, interior windows, security cameras in strategic locations, a public address system, emergency phones on each floor, and keyless security for non-public areas. Exterior lighting must be strategically placed, with an absence of shadows and greenery along pedestrian walks to parking lots or bus stops. The new facility must have a sheltered waiting area in the foyer for users to wait for vehicular pick-up.

Pedestrian and Vehicular Traffic Access

The UTM Master Plan sites the library to allow it to be serviced directly from the Ring Road. The proper orientation of the building is critical to capture pedestrian traffic from the 'Main Link,' to provide for a drop-off/pick-up zone along Middle Road outside the library entrance that will serve both the library and the CCIT building with proximity to a bus stop and parking. It is important that exterior lighting be bright and effectively positioned.

Computing and Communications

A fibre optic backbone connecting to the main UTM backbone is essential for the Academic Learning Centre/Library in acknowledgment of its reliance upon networked access and resources. The library must be designed with a strong, scalable technological infrastructure to provide a ubiquitous computing environment, both wired and wireless. A conduit system for power and data throughout the building in the flooring or in a drop ceiling is essential to achieve this ubiquity. Plenty of power outlets throughout are important to provide laptop computer access.