Project Planning Report for the Relocation of the John H. Daniels Faculty of Architecture, Landscape and Design to One Spadina Crescent

March 29, 2013

I Executive Summary

In recognition of the limitations and difficulties inherent in continuing to accommodate the Faculty of Architecture Landscape and Design at 230 College Street, Governing Council, in April 2011, approved the transfer of Site 7, One Spadina Crescent, from the Faculty of Arts and Science to the Daniels Faculty. To make way for renovation of the heritage building and redevelopment of the remainder of the site to meet the needs of the Faculty, the Visual Studies program, which had been located in One Spadina Crescent, was relocated to space renovated for its purposes in the Borden Building complex. The Faculty's own undergraduate program, which had also been using One Spadina Crescent, was temporarily relocated to space in OISE and 665 Spadina Avenue.

One Spadina Crescent presents a unique opportunity for the Daniels Faculty. As a University division at the forefront of the changing fields of architecture, landscape architecture, and urban design, the Daniels Faculty is focused on the convergence of new media, material and visual culture, building and landscape technologies, and the various urbanisms that underlie design-thinking as an academic and research heuristic. The new complex at One Spadina Crescent will accommodate an expansion of the Faculty's curricular programs and an intensification of its research activities, industry interfaces and public programs.

Over the years, the One Spadina site has been occupied by a number of different university departments; none of which have been able to undertake a major renewal of the building, or site. Both the existing heritage building (the original Knox Theological Seminary), and the grounds at One Spadina are widely perceived not to have been renewed or used to their full potential since the University acquired the property from the Connaught Laboratories in the early 1970's. Against this background, the relocation of the Daniels Faculty to One Spadina will signal a rebirth for this site.

With the planned transfer of UofT's Visual Studies programs to the Daniels Faculty, the Faculty will take another critical step in its mission to become a centre for design-based thinking, visual literacy, and the art, craft and technologies of city-building at University of Toronto's St George Campus. In the service of this mission, the Daniels project at One Spadina will create an integrated architecture, art and urban design community on an important, up to now neglected site within the University and the city.

The One Spadina project also offers an opportunity for design research and innovation that could serve as a demonstration project for buildings of comparable age on campus and across the country. The University and the Faculty's alumni, scholarly, professional and donor community strongly support the relocation of the Daniels Faculty to One Spadina. Through consultation, the Faculty's various constituencies have come to understand the significant value of this project, as follows:

1. The project will create a new, more public platform for the Daniels Faculty, one which, unlike its existing home at 230 college, has significant space for expansion over time;

2. The project will occupy one of the premier urban sites in Toronto (parallel to the Queen's Park), a site highly appropriate to the Daniels Faculty's interdisciplinary focus on City-Building;

3. The project will serve as a critical portal into the western border of the St. George campus, and promises to be a catalyst for the revitalization of the entire western edge of the St George campus.

The University has retained a team led by NADAAA architects, (key members of which had been selected in an international competition to design the Daniels facilities in 2009.) During 2011-12, NADAAA conducted extensive tests of the faculty's program in relation to feasibility and urban design studies of the site. In May 2012, based on preliminary concept planning and funding potential, a project budget was identified to construct the two main phases of the project. Continuing extensive consultation with the University has led to the development of a phased planning strategy, and a preferred design concept. The first two phases fulfill the Faculty's core academic needs, as outlined in this PPR. Subsequent phases (known as "pavilions"), addressing the Faculty's research and extra-curricular initiatives, are beyond the scope of this PPR, and will be the subject of further study.

This Project Planning Report updates the Interim Project Planning Report and indicates that the 2009 space program of 5,758 nasm should be adjusted to approximately 6,300 net assignable square meters, based on COU standards, to reflect academic planning currently underway and to recognize that the new location at One Spadina Crescent creates new functional opportunities and relationships within that space.

When the budget was set, gross areas for the heritage building (4,600 gross sq.m. including planned mechanical space for steam) and for the new construction (6,700 gross sq.m. including the new electrical substation room) were identified. The gross area was used to establish the construction and project costs.

The project has been planned in phases. Phase One remediates and restores the original 1874 building to be ready for occupancy by July 1, 2014. Phase Two will see the demolition of the later additions to the original structure and the majority of the new construction and will accommodate the remainder of the space program: studios, workshops, lecture theatre, classrooms and the library stacks. Planned pavilions at the northern extent of the site constitute a future Phase 3 of the project and are near stand-alone components, which can be implemented as funding becomes available.

It is Phase One which is being brought forward for approval at this time. The original 1874 building is to be remediated and renovated with the work taking place beginning spring 2012, The intention is to move the administrative unit, faculty offices, a majority of the library, seminar spaces and a limited number of studio spaces into One Spadina in July 1, 2014. Based on the current schematic design, approximately 2100 nasm of the 6330 nasm space program will be accommodated in renovated space in the original building. As well, a portion of the basement is to be renovated to provide for the infrastructure of the entire project. The budget for this phase was based on a gross area of 4600 sq.m.

II. Project Background

Membership

Steven Fong, Associate Professor, Daniels Faculty of Architecture, Landscape, and Design (Chair)
Richard Sommer, Dean, Daniels Faculty of Architecture, Landscape, and Design
Gail Milgrom, Director, Campus and Facilities Planning
Barry Sampson, Professor, Daniels Faculty of Architecture, Landscape, and Design (Special Advisor to the Dean on Building Projects)
Ted Kesik, Associate Professor, Daniels Faculty of Architecture, Landscape, and Design
Irene Puchalski, Librarian, Daniels Faculty of Architecture, Landscape, and Design

Liat Margolis, Assistant Professor, Daniels Faculty of Architecture, Landscape, and Design
Maxim Batourine, Director, Technology Services, Daniels Faculty of Architecture, Landscape, and Design
Shane Williamson, Assistant Professor, Daniels Faculty of Architecture, Landscape and Design
Andrea McGee, Registrar, Daniels Faculty of Architecture, Landscape and Design
Lisa Neidrauer, Office of the AVP. Campus and Facilities Planning
George Phelps, Director, Project Development
Bruce Dodds, Director, Buildings and Utilities Operations, Facilities and Services
Christian Rutherford, President, GALDSU (Graduate Architecture, Landscape & Design Student Union) Student Rep, 2012/13
David Freedman, President, GALDSU (Graduate Architecture, Landscape & Design Student Union) Student Rep, 2011/12
Sally Kassar, Undergraduate Student Rep

Terms of Reference

1. Identify the demand for additional academic space necessitated by enrolment and program growth within the Faculty of Architecture, Landscape and Design.

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

3. Identify areas of demolition, renovation and new construction at 1 Spadina Circle.

4. Identify all secondary effects, including space reallocations from within the existing building at 1 Spadina, and interim accommodation plans for the Faculty of Architecture, Landscape and design.

5. Respond to the recommendations related to space identified in the Accreditation Reviews of the Master of Architecture, and of the Master of Landscape Architecture Program (2007) and the OCGS review of the Master's Programs (2006).

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

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

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

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

10. Determine a total project cost estimate for the capital project including identified costs of implementation in phases.

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

12. Complete report by March, 2013.

Background Information

The School of Architecture at the University of Toronto was established in 1890 and was originally housed within the Faculty of Applied Science and Engineering. In 1961, the Faculty relocated to 230 College Street, which was purpose built in 1909 for the dentistry program. The building underwent renovations at this time to accommodate the relocation of the School.

Granted Faculty status in 1967, the school then had three departments: Architecture, Landscape Architecture, and Urban and Regional Planning. In 1998, the Faculty shifted its professional programs to the graduate level, and the name of the division was changed to Faculty of Architecture, Landscape, and Design. In recognition of the significant gift of $14 million to the Faculty in 2008, it was renamed the John H. Daniels Faculty of Architecture, Landscape and Design.

Planning to 2011

In 1997, a Users Committee for the School of Architecture and Landscape Architecture, now the Daniels Faculty of Architecture, Landscape, and Design, (DFALD) addressed the issue of facilities renewal and its role in supporting the academic program and vision of the Faculty. This resulted in a report that was approved by Governing Council in 1997. Specifically, the Users Committee Report addressed the space requirements for the Academic Plan for 2000 and identified projected enrolment in the masters programs and faculty and staff complements. The report also addressed facilities renewal and examined alternative strategies to renovate the existing building at 230 College Street. An ambitious multi-phased project was proposed, valued at approximately $10 million (1997), which was to be implemented as funding permitted.

A project planning committee was reconstituted, a decade later in 2008, to review the recommendations of the previous report, and address the then current requirements of the Daniels Faculty of Architecture, Landscape, and Design. A comprehensive plan was prepared that addressed space shortages and building renewal at 230 College Street, and was approved by Governing Council in the spring of 2009. An international competition was then held to identify a design team to implement the project.

The results of the competition revealed that the proposed renovations would in fact cost in excess of the approved budget of $20,000,000. In addition, the physical constraints of 230 College were such that the 2009 proposal could not accommodate the proposed expansion of Faculty programs being contemplated. The Faculty's new academic plan involved an expansion in the number and size of programs, including the repatriation, and expansion of the Honours, Bachelor of Arts in Architectural Studies undergraduate program from the Faculty of Arts & Science, a planned transfer of the Honours, Bachelor of Arts in Visual Studies undergraduate and Master of Visual Studies programs, and the creation of a new PhD program (PhD Architecture, Landscape and Design Studies) , none of which could be suitably accommodated at 230 College. The existing facility already lacked adequate space to accommodate the current need for studio space, faculty and research offices. New facilities would also be necessary to address insufficient digital media infrastructure and teaching facilities in the current facility, including workshops that are poorly equipped to support contemporary design teaching, and inadequate studio spaces for multi-media based design research and instruction. The lack of space at 230 College Street would also create long-term limitations in the establishment of innovative interdisciplinary program initiatives.

New Directions - 20011 – 2013

In recognition of the difficulties inherent in continuing to accommodate the Daniels Faculty of Architecture Landscape and Design at 230 College Street, in April 2011 Governing Council, approved the transfer of Site 7, One Spadina Crescent, from the Faulty of Arts and Science to to the John H. Daniels Faculty of Architecture, Landscape and Design with the Faculty of Arts and Science program in Visual Art.

The accompanying Interim Project Planning Report indicated that the 2009 space program of 5,758 nasm would need to be adjusted, based on COU standards, to reflect the academic planning currently underway and to recognize that the new location at One Spadina Crescent would create opportunities for new functional relationships. It was anticipated that the Faculty would need to construct a minimum of 5647 gross square meters (3227 nasm), as well as reuse all, or portions of, the existing facilities. At that time there were funds raised/and or committed of $17.5 million.

One Spadina Crescent presents a unique opportunity for the Daniels Faculty. The new complex will accommodate an expansion of the Faculty's curricular programs and an intensification of its research activities, industry interfaces and public programs. Over the years, the One Spadina site has been occupied by a number of different university departments; none of which have been able to undertake a major renewal of the building, or site. Both the existing heritage building (the original Knox Theological Seminary), and the grounds at One Spadina are widely perceived not to have been used to their full potential since the University acquired the property from the Connaught Laboratories in the early 1970's. Against this background, the relocation of the Daniels Faculty to One Spadina will constitute a new, integrated architecture, art and urban design community on an important, up to now neglected site within the University and the city. The One Spadina project also offers an opportunity for design research and innovation that could serve as a demonstration project for buildings of comparable age on campus and across the country.

The University and the Faculty's alumni, scholarly, professional and donor community strongly supports relocation of the Daniels Faculty to One Spadina. Through consultation, the Faculty's various constituencies have come to understand the significant value of this project, as follows:

1. The project will create a new, more public platform for the Daniels Faculty, one which, unlike the existing facilities at 230 college, has significant space for expansion over time;
2. The project will occupy one of the premier urban sites in Toronto (parallel to the Queen's Park), a site highly appropriate to the Daniels Faculty's interdisciplinary focus on City-Building;

3. The project will serve as a critical portal into the St. George campus, and promises to be a catalyst for the revitalization of the entire western edge of the St George campus.

The University has retained a team led by NADAAA architects, key members of which had been selected in an international competition to design the Daniels facilities in 2009. During 2011-12, NADAAA conducted extensive tests of the faculty's program in relation to feasibility and urban design studies of the site. In May 2012, based on preliminary concept planning and funding potential, a total project budget was identified to construct the two main phases of the project. Continuing

extensive consultation with the University has led to the development of a phased planning strategy, and a preferred design concept. Consultation has included:

- Prior to undertaking the current planning, an all school workshop, THE DANIELS FUTURES WORKSHOP involving faculty and students was held to examine the building's program in relation to the faculty's mission.
- Students representing both the Undergraduate BAAS, and the Professional Masters programs participated in planning consultation meetings with the consultant team for One Spadina beginning in November 2012, through to the present.
- A website with in-progress drawings and documents on the One Spadina Project was mounted in early 2013, and will be regularly updated. A corresponding e-mail account has been set up for students, faculty and staff to submit questions and offer comments on the project.

The first two phases fulfill the Faculty's core academic needs, as outlined in this project planning report. Subsequent phases (known as "pavilions"), addressing the Faculty's research and extra-curricular initiatives, are beyond the scope of this PPR, and will be the subject of further study.

Statement of Academic Plan

The following is a summary of the Daniels Faculty's Mission and Strategic Academic Priorities:

1. Build a new foundation in undergraduate education, using the history, theory, technologies and contemporary dimensions of architecture, landscape, art and cities as lenses though which to provide a liberal-arts education steeped in design-thinking and material culture.

2. Consolidate the Faculty's core strength in graduate-based, professional design education with a particular focus on modeling new modes of design practice in the fields of Architecture, Landscape Architecture, and Urban Design.

3. Raise the ceiling for advanced study and research by developing a new intra-disciplinary PhD in Architecture, Landscape, and Design Studies, and explore further advanced, post-professional degrees in areas of specialty beyond Urban Design, including health and environment, and smart building technologies.

4. Continue to build, and further the prospects of an internationally recognized faculty complement by refining, expanding and funding research activity and developing further supports for creative practice, keyed to partners in cognate disciplines, industry and government.

5. Further enhance the student experience by continuing to develop innovative pedagogies, curricular and extra-curricular enrichment, and building bridges to external communities that build upon the Faculty's strengths in professional practice, creative practice and emerging genres of research.

6. Expand networks of affinity to expand our pool of domestic and international students, create placement opportunities for existing students, and engage our alumni in lifetime learning.

7. Cultivate new constituencies for Architecture, Landscape Architecture and Urban Design, in both the Greater Toronto Area, and internationally, through civic outreach and stellar public programming, thereby garnering new sponsors from both the public and private sector.

8. In recognition of converging areas of interdisciplinary interest pursue curricular synergies, transfer and integrate UofT's Visual Studies programs to the Faculty with the aim of consolidating art, design and architecture-related resources on the St. George campus.

9. Construct a new physical platform for the Faculty that can accommodate planned growth in its core educational programs, exemplify the most innovative urban design and sustainable building techniques, and create an unparalleled site for educating designers of the built environment, conducting pioneering research and staging civic outreach.

Background

The Daniels Faculty of Architecture, Landscape and Design at the University of Toronto is the oldest faculty of Architecture in Canada, and among the longest standing in North America. The Faculty has educated many of the design professionals that have given form to the built environment in Canada (and internationally) throughout the past 100 years. Starting in 1998 the faculty initiated a process of transformation from a division focusing exclusively on undergraduate professional education in Architecture and Landscape Architecture, to becoming a Graduate Faculty with a depth of capacity in both professional education and design research.

Over the past decade, the process of mounting new Graduate Professional Programs in Architecture, Landscape Architecture and a Post-Professional Program in Urban Design has been achieved with great success. In 1998, the Faculty had less than four tenured-stream faculty; thus a majority of the Faculty's 19 current tenure-stream academic staff were hired in recent years to build the graduate programs. The impact of this investment in the renewal of the faculty is now evident. In peer-reviewed measures of excellence in creative practice and design scholarship over just the past 5 years, the accomplishments of the Daniels Faculty's combined tenure-stream and adjunct faculty, as well as its current students and recent alumni, exceed, by a wide margin, any other Faculty if its kind in Canada, and place the school in high standing internationally.

Despite the successful mounting of professional graduate programs and their attendant practice-based activities, key historical mandates, such as the creation of doctoral programs, remain unfulfilled. These, along with the Faculty's renewed focus on undergraduate education, and a new alliance with Visual Studies at UofT, provide the key to a perhaps even more overarching transformation of the faculty's mission in the coming years than has already occurred.

Historically schools such as Daniels have struggled to manage tensions between the advancing of Architecture, Landscape Architecture and Urban Design as an art and a craft, and the training of individuals for a service-based profession. As professional training and the teaching of design have fallen more and more to the schools, they have almost by default utilized a practice-based pedagogy. Today both the needs of the design professions and the role of art, architecture and design faculties within research universities are undergoing significant transformation.

Expanding the Mission: Proposed New, Expanded and Realigned Programs

The Daniels Faculty is in an unparalleled position to advance design-based academic programs and research that will lead to the creation of more ecologically sustainable, socially just and beautifully crafted buildings, landscapes, and cities. Breaking from the traditional approach of its peers at the majority of other design schools, the Daniels Faculty is actively engaging emerging forms of

scholarship, technology, and information creation in an effort to model new modes of practice better suited to the trans-disciplinary, network-based ways in which the built environment will be made and remade in the future. An important outcome of this change from a traditional practice-based pedagogy, to an urban-focused, information-based pedagogy will be a marked increase in the faculty's ability to undertake innovative research and prepare students with highly advanced and transferrable skills in environmental and programmatic analysis, urban morphology, parametric design, digital fabrication, embedded responsive media, and intelligent building. Among the many changing realities underscoring the Faculty's renewed mission, vision and focus, is the yet unrealized potential within the sustainable urbanism sector, as new environmental and design standards are brought to bear on vast amounts of new and existing infrastructure both in Canada, and internationally.

Building on the recent transformation of its professional programs, and on the outstanding research and creative accomplishments of its faculty, students and alumni, the faculty is now embarking on a new phase of growth and renewal that is focused on advancing a globally-attuned mode of design research, education, and civic advocacy. This expanded mission involves the proposed creation of a new PhD program, the recent re-absorption of undergraduate programs in architecture from UofT's Faculty of Arts & Science and an in process transfer of UofT's programs in Visual Studies to the Daniels Faculty. Together with reforms to the Daniels's graduate professional programs in architecture, landscape architecture, and urban design, which will continue to be at the core of our mission, this new base of undergraduate studies, raised ceiling of post-graduate studies and new alignments with related visual studies media will set the stage for an intensification of the faculty's research activities, industry interfaces and public forms of outreach.

The new Daniels Complex at One Spadina will also directly address a new wave of enrolment growth anticipated for the Toronto region by a rapid and significant expansion of the Faculty's undergraduate programs. While the overall size of the professional programs is expected to remain stable, expansion of specialized masters and doctoral level programs are expected to address areas of emerging interdisciplinary research, such as urbanism, health and building sciences..

For 118 years, graduates of the University of Toronto architecture school have spread across the country and the world as innovators and leaders in the design professions. Since the creation of the Master's Programs, the Faculty has developed a unique interdisciplinary approach and, consistent with that, a leading position among universities in North America in an emerging focus on cities and design-based scholarship and innovation. In addition to addressing the various space needs of the newly integrated academic community, this project will provide a platform for design research, thereby maximizing internal synergies and external engagement with our cohorts in the arenas of planning, policy, culture and technology.

New (to DFALD) Programs

(undergraduate) Honours Bachelor of Architectural Studies Program
Effective September 1, 2012, the Honours Bachelor of Arts , Architectural Studies Major program was transferred to the John H Daniels Faculty of Architecture, Landscape, and Design. The program was transferred without any change to the curriculum or degree requirements. DFALD had been delivering all the courses required for the major and supported the program with an academic program director. The intent was for this arrangement to continue and be enhanced. The program is

continuing to be offered as a broad Liberal Arts curriculum and students have access to FAS courses required to complete their degree. Considerations for future space and facility requirements associated with the transfer are being brought forward in this project planning report for the relocation of the faculty. Budget implications have been negotiated with the Planning and Budget Office.

As transferred, the Daniels Faculty's Architectural Studies Major programs requires 8.0 full course equivalents, with approximately 4.0 core FCEs from A&S and 4.0 FCEs from the BAAS concentration. This mix may change over time, while maintaining the breadth requirements of a Liberal Arts degree. Planning under way envisions a gradient over four years where students spend more time in coursework on their Daniels concentration in the last two years of study Thus, averaged over the period of 4 years each student would spend approximately 6 to 8 hours per week receiving ARC scheduled instruction in a classroom, or a studio.

With the current 284.6 FTE students in the Honours Architectural Studies program, the demand for scheduled instructional hours in "design studio" space this past year was 24 hours in the Fall 2012 term and 36 hours in the Winter 2013 term. It is anticipated that this program will increase a further 80% to 511.8 FTE students by the Fall term 2017. Demand for scheduled instructional hours in "design studio" space is thus anticipated to increase by at least 80% and with programmatic and curriculum changes, possibly more.

As current students (both Daniels and A&S affiliated) cycle through the program, the program will continue to offer the current FCE (2) concentrations. From winter 2013 through winter 2018 a new curriculum /course offering, will be introduced, providing upwards of 4 concentrations and with a potentially 5 (minor) concentrations.

With the new capacity provided by this revitalization project, the John H. Daniels Faculty of Architecture, Landscape, and Design will be able to support its expanded undergraduate enrolment by expanding its teaching and student services. Services and spaces for them will expand in the following areas:

- -Computer Modeling
- -Printing and Fabrication
- -Studio related storage
- -Student Support Staff

<u>Honours Bachelor of Visual Studies (undergraduate) and Master of Visual Studies Programs (graduate)</u>

When the Governing Council agreed to assign One Spadina Crescent to the John H. Daniels Faculty of Architecture, Landscape and Design in 2011, it did so with the understanding that the Daniels Faculty was in discussions with the Faculty of Arts and Science's programs in Visual Studies about transferring to the Daniels Faculty, and that, at a minimum, a strategic alliance for the respective programs to share space was being considered. The full transfer of A&S's Visual Studies programs to Daniels are now in process, under the logic outlined below.

As a University Division at the forefront of the changing fields of architecture, landscape architecture, and urban design, the Daniels Faculty is focused on the convergence of new media, material and visual culture, building and landscape technologies, and the various urbanisms that underlie design-

thinking as an academic and research heuristic. The Faculty currently offers programs of study with a focus on interdisciplinary training and research through its Master of Architecture, Master of Landscape Architecture, Master of Urban Design, and Honours Bachelor of Arts in Architectural Studies.

The Arts and Science undergraduate and graduate programs in Visual Studies are also inherently interdisciplinary and non-media specific. Similar to the existing Daniels programs which are focused on advancing new modes of architecture and design practice , the Visual Studies programs are rooted in social, cultural, and theoretical issues embodied in contemporary art, and focus on advancing contemporary modes of urban, studio, and curatorially-based practices.

In recognition of converging areas of interdisciplinary interest, the Daniels Faculty, in discussion with the Faculty of Arts and Science, is currently undertaking an initiative to transfer the Visual Studies program to the Faculty with the aim of consolidating art, design and architecture-related resources on the St. George campus. If approved, the programs would be transferred without any change to curriculum or degree requirements. It is anticipated that members of the academic staff providing instruction in the Visual Studies program, currently in the Department of Art, Arts & Science would transfer their academic appointments to the Daniels Faculty, with an effective target date of July 1 2013.

The proposal to transfer the programs of visual studies to the Daniels Faculty where it will join existing programs in architecture, landscape architecture, and urban design is based on the shared disciplinary origins of the respective disciplines, the shared curricular and instructional techniques involved in delivering these programs, and their shared needs in terms of space (studios) and other facilities-based resources including media and fabrication laboratories. Visual Arts and Architecture share strong disciplinary roots, for example in Architecture's dependence on descriptive geometry and the emergence of perspective, Landscape Architecture's foundations in Painting, and more recently Urban Design's methodological basis in visual analysis, filmic/time based modes of documentation, and related forms of cognitive mapping. The shared roots in education are also strong, by virtue of the fact most schools of architecture and landscape architecture in North America, including U of T's grew out of the (French) Beaux-Arts tradition and later evolved under the influence of the (German) Bauhaus, each in their distinctive way, conceived of the teaching and practice of Art, Architecture and Design across a common platform.

In preparation for construction on the site at 1 Spadina Crescent, the Visual Studies programs, and faculty have been relocated to space in the Borden Building complex, which has been renovated to meet its current needs. When new facilities for the Faculty are completed on the crescent it is anticipated that faculty members and students in Visual Studies will have access to media, fabrication and classroom facilities in the new complex. It is assumed that studio and office needs for the Visual Studies will remain within the Borden Building complex for the foreseeable future, although it is the intention of the Faculty to seek opportunities for interdisciplinary teaching and activities that will migrate between studio space within the new complex and studio space within Borden.

<u>PhD Program in Architecture, Landscape and Design Studies</u>
The Doctor of Philosophy (PhD) degree in development at the John H. Daniels Faculty of Architecture, Landscape, and Design will offer a unique program of study and research leading to a PhD in Architecture, Landscape and Design Studies. The program is intended for persons who wish

to enter careers in advanced research as well as professional careers in architecture, landscape, or urban design that advance new modes of multi-disciplinary building and urban-based forms of practice. Unlike traditional PhD programs across North America, the Daniels Faculty will serve as a facilitator of advanced research and scholarship integrated across a wide array of divisions at the University of Toronto. This multi-disciplinary approach and structure will admit applicants whose research interests are aligned with those of any member of the PhD program faculty in the position to fund and to supervise the student research. The selection of courses and appointments to students' PhD committees will reflect the nature and emphasis of the research being undertaken. Currently, students may have their research relate to the following disciplinary areas: architecture, landscape architecture, urban design, with these areas constituting historical and contemporary research in areas such as sustainable landscape and urbanization, modeling of cities, infrastructure design and embedded media/responsive building and urban technologies. The PhD program will also be strengthened by the Daniels faculty's research ties to University of Toronto EDUs and Centers, including The Knowledge Media Design Institute, the Centre for the Study of the United States, The Cities Centre and The Global Cities Institute (the latter two are Daniels EDU's).

The PhD program will address the need for research and intellectual leadership that makes connections across the constellation of arts, humanities and physical and social sciences, and other allied professional activities (Law/zoning, Medicine/human health and Business/real-estate). The program not only seeks to train scholars for academic careers but also supports research that advances the state of professional practice and contributes to our understanding of the social, economic, and political factors at play in the contemporary urban condition.

The PhD program arises from the Faculty's commitment to architecture and design research as a significant disciplinary form of cultural production able to synthesize research and scholarship relating to the history, theory, and production of building and landscape systems/ecologies and cites/human settlements across various scales, materials, and forms of expression. Critically revisiting architecture's once vaunted role as "the mother of the arts" within the classical schema, the Daniels faculty sees it role as catalytic in relation to various forms of primary and secondary research and scholarship in the arts, humanities, social and physical sciences relating to buildings, landscapes, and urbanization. Many disciplines are making important, specific contributions to the making and remaking of the built environment, but on their own lack the capacity to assess and design the built environment in the holistic ways that are needed, and are being called for today. The Daniels Faculty's designers, scholars and technical experts take Architecture, Landscape Architecture and Urban Design's geographic and spatial modes of analysis, interpretive and descriptive tools and critical and projective methods as the ground upon which to equate and integrate the various modes of scientific, historiographic and creative research and inquiry that will be needed to address the kinds of environmental degradation, social inequity and human health issues that result from the poor planning, design and construction of cities and landscapes in societies today.

The PhD program is currently being projected as a steady state of 22 students. This cohort will be accommodated in the upper floor of the western wing of the heritage portion of the One Spadina building. A space with carrels and book storage for each student, a shared meeting areas fro seminars, and a kitchen will be located in and adjacent to one floor of the west pavilion of existing One Spadina.

Space Requirements

Overview of Existing Space

The Faculty of Architecture, Landscape, and Design currently occupies approximately 4108nasm (6530gsm) within its building located at 230 College Street.

The undergraduate Architectural Studies program, originally a Faculty of Arts and Science program, has now been transferred to the Daniels Faculty. The classrooms and design studio spaces are being accommodated within the centrally allocated classrooms of the Office of Space Management with the design studios located at OISE in an arrangement where two classrooms are booked per section. As well, in the winter of 2013, "hot desk' or 24 hour drop in workspace for the undergraduate students has been provided, in 300 nasm, at 665 Spadina Avenue.

DFALD is also leasing 133sm at 80Bloor Street West for a 5 year term until May 2017. This space is being leased for the Responsive Architecture at Daniels (RAD) group.

Recently, the Visual Studies program was relocated to newly renovated space (approximately 1,100 nasm) in the North and South Borden Building. As described above, it is anticipated that the program will be formally transferred to the Daniels Faculty of Architecture, Landscape and Design in July 2013. At that time the space allocated to the Visual Studies program will fall under the jurisdiction of the Faculty.

Design Studios

The School provides permanent studio space for each graduate student enrolled in its M-Arch, MLA and MUD programs. These design studios are currently located on the third and fourth floors of 230 College Street, and are arranged in a flexible open plan manner. Students are provided with individual workstations and shared modeling tables that are arranged in conjunction with moveable partitioning to subdivide the space according to the needs of each studio class. As a result of overcrowding, there is a lack of "flex space" needed for group meetings, in-class critiques of large format projects.

Studio Support Facilities

The existing workshops were created for a time when the curricular requirements of the programs were limited to the production of wood based models. The wood shop has been recently upgraded with the addition of a modern dust collection system. It lacks a suitable shipping and receiving area for materials at grade and the existing freight elevator is too small to be of any use in moving materials to the basement. To address the needs that come with digitally-based modes of fabrication and rapid prototyping, new shops and labs have been retrofitted in areas adjacent to the original woodshop. These house three laser cutters, a Computer Numeric Control (CNC) machine, a computer driven post forming machine and rapid prototyping machines. Two of the laser cutters are dedicated to student use and are located in their own room with access managed by the shop supervisor. The other equipment is located in a research lab next door and made available for student use. Each of these pieces of equipment require environmental control technologies that have space and operational implications that are only being minimally met in the existing facilities. Due to space limitations, the faculty is falling behind its North American peers in developing digitally-based fabrication laboratories.

Existing computing facilities include two teaching labs. One includes 12 high-end workstations with a full software complement and a dedicated ceiling-mounted LCD projector and screen. The second

teaching lab includes a dedicated three-screen theatre. In addition to teaching labs, a secondary support lab includes 12 later-generation high-end workstations that are meant to complement the personal computing resources of students. A 3-dimensionalmodeling lab is located on the 3rd floor. All of these digital technologies/labs have been retrofitted into the existing studio floors, but lack the level of integration with studio and instructional spaces that the faculty's curricula will ultimately require.

The IT staff includes three technologists who oversee the information technology needs of the Faculty. The audio-visual resources of the Faculty include a media/photo lab with a full-time staff member. The It and Av services were recently consolidated and the staff complement relocated to renovated space in the former photo studio, which is provided with excellent daylighting. The server remains in its original location, on the main floor, but the former work areas for It staff have been converted to an office for sessionals with three work stations.

Library
The library's collection holds approximately 30,000 volumes. Space shortage is a major concern. This is a research collection focused on the undergraduate and graduate programs offered at Daniels. Bookshelves are at 100% capacity and the library has had to relocate approximately 6300 items to the off-site book storage facility at Downsview.

A media/photo lab is provided for student use on the third floor next to the Faculty's new printing centre, which is located in former studio space.

The existing library seats 45 in a combination of lounge seating, carrels and tables. In addition to computer workstations for staff, the library has 10 workstations for users, 5 flatbed scanners, a digital copier, and wireless access.

Lecture Hall and Classrooms
The Faculty currently has a supply of large to small classrooms for its lecture and seminar based graduate courses, including a tiered lecture hall, which seats approximately 170. The tiered lecture hall, while sufficient for current classes, also hosts the school's many public lectures, conferences and symposia.

Offices
Offices are provided for full-time faculty and staff. Currently at 230 College Street, sessional faculty share three office spaces. Recent growth in the full-time faculty complement has created a shortage of proper faculty offices. Future growth in the number of academic programs, coupled with a planned increase in research endeavors within the school, will directly affect the number of faculty and administrative staff complements and ultimately increase the space needs in general.

Undergraduate Program
During the years 2010 to 2012, 205nasm of space in 1 Spadina was used for the studio/workspace component of the undergraduate program, and in the fall of 2012 an additional 205 nasm was temporarily allocated to the program at One Spadina to accommodate an expanded undergraduate program. For the winter term of 2013 the program will use OSM classrooms at OISE for design studio instruction and 300 nasm at 665 Spadina is being provided for independent work. Lecture and seminar sections are being accommodated, as they have been in the past, in general campus

classroom facilities. The undergraduate program is currently serviced by administrative and academic staff (minimally) housed at 230 College Street.

Visual Studies Program
The Visual Studies Program is accommodated in 1,100 nasm of purpose renovated space in the North and South Borden Buildings.

Occupant Profile
Table 1 below shows the existing (2012/13) and the planned growth for the FTE of academic and administrative staff, for the graduate programs of the Daniels Faculty and the undergraduate Architectural Studies and Visual Studies programs.

Table 1: Existing and Planned Growth Complement Plan

Daniels Faculty	**Current 2012/2013**	**Anticipated Growth**	**2017 Plan**
Faculty/Staff			
FTE Faculty – ARCH, LA, MUD	31.07	17	48.07
FTE Faculty – Visual Studies	7.05		7.05
FTE Non-academic staff	18.67	7	25.67
Total Faculty and Staff	**56.79**	**24**	**82.79**
# Courses/Sections Taught By Sessionals - One term only	11.6	5.8	17.4
Graduate Students - Architecture			
FTE M-ARCH	270.3	1	271.3
FTE MLA	79	-3	76
FTE MUD	14	9	23
FTE PhD	0	20	20
FTE P-Prof Masters (add 27 new)* * in process, and not yet approved			
Non-Degree	1.3	0.9	2.2
Subtotal FTE Arch Graduate Students	**364.6**	**27.9**	**392.5**
Visual Studies			
FTE VMVS	16	0	16
Subtotal Graduate Students	**380.6**	**27.9**	**408.5**
UG Students			
FTE BA Architectural Studies	284.6	227.2	511.8
FTE BA Visual Studies (Specialists/Majors)	99.6	36.8	136.4
Less: Teaching done by FAS (net)	-123	-47.2	-170.2
Subtotal FTE UG Students	**261.2**	**216.8**	**478.0**
Total FTE Students	**641.8**	**244.7**	**886.5**

Space Analysis

As noted in the Interim Project Planning Report for the Relocation of the Daniels Faculty, which went to Governing Council in April 2011, it was expected that the proposed 2009 space program of 5,728 nasm to be accommodated in a combination of existing and new space, would be adjusted to reflect current academic planning. The final Project Planning Report was to contain a detailed space program using up to date input measures. Nevertheless, it had initially been anticipated that the 2009 space program could be carried over to the new site, However, what was not fully understood until this past fall was the potential for growth that the undergraduate architectural studies program would have and

the impact that that program would have on the need for space to support it. As well, growth had occurred in the faculty since 2009 with increases in the numbers of faculty and graduate students.

The following COU space calculation and the proposed space program reflect the need for additional space beyond the 5,728 nasm identified in 2009, and represents an approximate 600 nasm increase. Nevertheless, it must be clearly noted that a total project cost was estimated in early 2012 and a budget set and the space requirements as now identified will need to be met within that budget envelope.

The table below compares the existing facilities and the space generated using COU/UofT space formula and guidelines with the proposed space program. The total number of FTE faculty, staff and students projected for 2017/18 were used as input measures with the Council of Ontario Universities Building Block space formula and UofT guidelines to generate a theoretical requirement for facilities for DFALD, as described below. The last column represents the disposition of the detailed space program which shows, as expected, some shifting of space allocations within individual categories of space.

The detailed space analysis can be found in Appendix A. The Visual Studies program is presented separately in Appendix B.

Table 2: Comparison Existing to Proposed Nasm

	Existing	COU Guidelines Nasm (for 2017)	Proposed Space Program Nasm
Graduate Studios/ Research/ Support	2,091	2,992	3,271
UG Studios/Work Spaces	300	819	851
Academic & Non-Academic Offices & Support	856	1,234	767
Library and Study Space	318	470	558
Classrooms (proposed incl Event Space)	507	558	670
Lounge, Exhibit, Club Space	337	271	213
Total	**4,409**	**6,344**	**6,330**

III Project Description

a) Vision Statement

The John H Daniels Faculty of Architecture, Landscape and Design will relocate to One Spadina Crescent, which occupies a landmark position in the city, at the western edge of the St. George Campus. The upgraded heritage building, integrated with a new complex, will become a working prototype of how creative planning and resilient building techniques and technologies can be brought to bear in transforming a currently under-utilized site into an urban design exemplar.

The John H Daniels Faculty of Architecture, Landscape and Design is the oldest and foremost school of its kind in Canada, and among the most highly respected internationally. Building on the Faculty's record of urban innovation, the new complex will accommodate an expansion of the faculty's

curricular programs and an intensification of its research activities, industry interfaces and public programs.

The creation of a new, digitally-conditioned breed of design studio-laboratories will support all undergraduate, graduate, and doctoral program streams, and provide students with the up-to-date studios and laboratory with media and fabrication infrastructure that is essential for training in architecture, landscape architecture and urban design today. The new complex will replace technologically dated instructional space and equipment currently in use within the current facility. For example, the current digital output needs for the Faculty's graduate students have outgrown the available equipment, which now includes various kinds of three-dimensional printers, as well as the spaces required to support them. The new complex will need to house facilities such as new grant-funded laboratories for design research, and new computer labs for instruction and high-end metrics visualization support for city-modeling, urban design and building science research.

b) Space Program and Functional Plan

A proposed space program , based on the COU space guidelines and refined to meet the specific needs of DFALD has been developed to guide the schematic design phase of the project and is shown below. The total of 6,330 nasm represents facilities that will be located in both the existing heritage building and the new building. (As well, there are a series of pavilions planned to be added to the northern end of the site which would provide facilities for increased fabrication capabilities, a Gallery, a Model Cities Lab and Theatre, and research space for the Global Cities Institute EDU, incorporating the current Cities Centre EDU, which are not part of the current project.)

The proposed space program is:

SPACE PROGRAM	#Rms	Nasm Per/or Avg Nasm	Subtotal Nasm	Total Nasm
Faculty Office and Support				**381**
Faculty Office- Single	21	12	252	
Faculty Office - Multi	3	13	39	
Workstations	9	6	54	
Consultation/Meeting Room	2	13	26	
Copy/Scan/Print Room	1	10	10	
Central Admin and Support				**386**
Dean's Suite				**54**
Dean's Office	1	20	20	
Dean's Exec Assistant	1	10	10	
Dean's Reception/Waiting	1	12	12	
Communications Coordinator - workstation	1	6	6	
Communications Asst - workstation	1	6	6	
Academic Admin				**56**
Associate Dean, Research	1	14	14	
Director, M Arch	1	14	14	
Director, MLA	1	14	14	

SPACE PROGRAM	#Rms	Nasm Per/or Avg Nasm	Subtotal Nasm	Total Nasm
Director, Undergrad program	1	14	14	
Development				**20**
Director of Advancement	1	14	14	
Advancement Asst - workstation	1	6	6	
Business Services				**30**
CAO	1	14	14	
Business Officer	1	10	10	
Office & Financial Asst - worksation	1	6	6	
Student Services				**112**
Associate Dean, Academic	1	14	14	
Registrar	1	13	13	
Associate & Assistant Registrars (3)	3	12	36	
Program Coordinator - workstation	2	6	12	
Central Student reception (receptionist,assistant, 2x workstudy)	2	6	12	
Central student reception waiting area	1	12	12	
Meeting room/Sessional Consults	1	13	13	
Admin Staff Support				**114**
Staff Lounge Kitchenette	1	14	14	
Staff Coat Closet	1	2	2	
Office Storage (files)	1	25	25	
Office Storage	1	25	25	
Board Room	1	30	30	
Staff WC	1	4	4	
Copy/Mail room (in student servcs)	1	14	14	
Studios: Labs and Support				**3364**
Graduate studios and crit/teaching: 360 desks	flexible		2100	
PhD Area: 25 carrels, kitchenette	1	136	136	
Grad Student Exhibit/crit area	3	40	120	
Grad Student Exhibit/crit area	1	127	127	
Studio/Archive storage (basement)	2	15	30	
Undergraduate studios: 240 hotdesks+lecture zones	1	766	766	
Undergrad studios: meeting/work room(lounge)	1	55	55	
Undergrad storage & lockers (270 floating)	1	30	30	

SPACE PROGRAM	#Rms	Nasm Per/or Avg Nasm	Subtotal Nasm	**Total Nasm**
Fabrication Labs & Support				**555**
Shops/Fabrication				**529**
Shop Storage (scattered throughout)	1	35	35	
Wood/general shop	1	145	145	
Tool storage (cubbies)	1	10	10	
Structure and Construction lab (Mock-up/Assembly)	1	80	80	
Laser cutter	1	33	33	
Compressor Room	1	14	14	
Vacuum Former Room	1	17	17	
CNC & Metal Fabrications Workshop	1	165	165	
Computer Lab (3d printing, 4 stations)	1	30	30	
Shop/Dig. Fabrication Admin				**26**
Supervisor's Office Multi	2	13	26	
Research Labs & Support				**203**
IT/AV Services				**77**
IT Manager Office	1	13	13	
IT Tech workstations	6	6	36	
Help Desk Reception	1	13	13	
Server Room (shared IT room)	1	15	15	
Support				**76**
Plotting Room	1	25	25	
Plot Paper storage	1	4	4	
Photography Studio	1	13	13	
IT Cart storage	1	4	4	
Computer Lab with high end equipment	1	30	30	
Centre for Landscape Research				**50**
Landscape Research Lab	1	25	25	
Landscape Visualization Lab	1	25	25	
Library				**558**
Librarian's Office	1	13	13	
Library Workroom	1	30	30	
Library terminals/Circ desk	1	25	25	
Photocopy Room	1	10	10	
Collection Space	1	260	260	
Study Space, 48 seats at tables (approx.24 seats)	1	96	96	
32 carrels (22 carrels shown)	1	64	64	
3 collaborative study rooms, seating 12/14 per	3	20	60	

SPACE PROGRAM	#Rms	Nasm Per/or Avg Nasm	Subtotal Nasm	Total Nasm
Shared Common, Support				**213**
Student café	1	20	20	
Student Lounge	1	35	35	
Student Union Office (1 multi)	2	12	24	
Exhibition Gallery/Critique Space	1	105	105	
Exhibition Media Support Rm & Storage	1	5	5	
Catering Kitchen	1	10	10	
Shipping and Receiving	1	14	14	
Classrooms Etc.				**670**
Chair storage	1	2	2	
Large divisible lecture theatre/event space (with control room)	1	498	498	
Grad Classroom - flat Floor, 80 Laptop Lab	1	125	125	
Grad - 20 laptop seminar room	1	45	45	
TOTAL			**6330**	

Gross Area

When the budget was set, gross areas for the heritage building (4,600 gross sq.m. including planned mechanical space for steam) and for the new construction (6,700 gross sq.m. including the new electrical substation room) were identified. Thus, the combined total gross for the new and old buildings was anticipated to be 11,300 gross sq.m.

With a space program of 6,330 and a gross of 11,300 this would suggest a gross to nasm ratio of 1.79 (11,300/6,330). However, the most critical number is the gross of 11,300 which was used to establish construction and project costs. In order to ensure that the project remains within budget, required adjustments to elements of the space program and/or the amount of gross that can be constructed may be necessary.

Graduate Studios

The graduate studio will be a flexible space outfitted with a robust digital and environmental control infrastructure to support a variety of approaches to design pedagogy, as well as configurations of the space. Students will be provided with workstations for individual work using a variety of hands-on and digitally based modes of research and design experimentation. The studio size and infrastructure anticipates reconfigurable clusters of the workstations around communal worktables supported by movable LED screens for informal seminars and collaborative work. The arrangement of opaque walls, space and infrastructure in the studio will also facilitate in-studio work-in-progress critiques. Complementing the studio space, a variety of small to large critique spaces will be strategically located throughout the building to enhance visibility of studio reviews and reinforce the vitality of the Faculty as a creative design community. Designed specifically to meet the special physical and process needs of reviews the provision of these specialized, but flexible spaces will also relieve pressure on classroom spaces used primarily for lectures.

Undergraduate Design Studios and Hot Desks
The Daniels Faculty has developed an innovative new undergraduate pedagogy that will be supported by an exciting new form of studio space. This space will also feature a robust digital and environmental control infrastructure that will provide flexibility, as well as support the particular needs of design instruction in the undergraduate program. It will include reconfigurable teaching areas, clusters of worktables for collaborative instruction and work supported by LED screens, and light, mobile acoustical separators. When not used for instruction, design instruction areas will be available for use by students on a shared use basis. Complementing these areas will be shared use studio space with fully wired 'hotdesks' that will be available on a 24 hour basis for nonexclusive use by students as needed. In combination with lap top lounge areas and secure storage the undergraduate studios will provide a home base for students, whether at the Faculty for design instruction or when staying on campus between classes.

Undergraduate Classrooms
The classroom component of the architectural studies program will be accommodated primarily within the new facility supplemented by Office of Space Management non-dedicated classrooms elsewhere on campus, most particularly to meet the needs of classes with large enrolments (e.g. 250-500 students) or time tabling conflicts . The Faculty will co-ordinate its requirements for central classroom facilities with OSM. Approximately 80% of the UG classroom requirements will be supported by the new FALD building.

Lecture Theatre/Multipurpose Event Space
A multipurpose event space will be located at the heart of the school and serve as the primary venue for large to medium sized lectures. Capable of providing seating for up to 500 for special events, this space will be divisible into two or three smaller classrooms with different seating capacities using movable acoustic walls. To meet classroom configuration needs of both the undergraduate and graduate programs it is assumed this space will most often be configured as a medium sized classroom for approximately 200 and a smaller classroom for up to 125. This facility will be fitted out with interactive audiovisual technology to support its various configurations and will be designed to be highly visible from many locations in the building. A smaller flexible classroom will be outfitted for use in a lecture format as a digital laboratory for visual communications instruction with up to 80 seats.

Workshops
The new workshop and fabrication facilities will provide a highly visible and integrated centre for material fabrication and research. It will include a well-equipped wood shop for traditional hands-on, craft based wood working supported by infrastructure required for health and safety including a dust collection system. Adjacent spaces will accommodate state of the art computer driven equipment such as CNC routers and molding equipment to facilitate new approaches to fabrication in various materials, including metal. These and ancillary spaces for supervisory staff and storage will be clustered around a fabrication and assembly spaces that will be available to students as well as faculty researchers for model assembly, as well as the production of larger construction prototypes. This unique space will provide an exciting new opportunity for members of the faculty to build and display large experiments and constructions at full scale. Adjacent to these facilities will be a new centre for Information technology services around which will be clustered smaller scaled spaces for computer driven laser cutters and rapid prototyping equipment, as well paper based plotters.

Library
The new library will be located and designed to be a highly visible and attractive centre of quiet study and research within the Faculty. It is expected to include a gracious new reading room in a prominent wing of the heritage building and will offer significant expansion of seating places available to students and faculty within an exemplary day lit environment. In addition to traditional seating at tables in the reading room, seating expansion will include study carrels, open lounge seating and group study rooms providing acoustically separated spaces for collaborative small group interaction within the library. The library will be fully compliant with the Accessibility for Ontarians with Disabilities Act (AODA) and arranged and equipped to maximize the security as well as accessibility of the collections for library users.

Non-Assignable Spaces
The non-assignable spaces include, but are not limited to, areas such as corridors, stairs, mechanical service rooms etc. These aspects in the building program will be accommodated within the overall gross square area.

All aspects must be compliant with the University of Toronto Design Standards and the groups within Facilities and Services responsible for the operation and maintenance of the buildings and grounds must be engaged at an early stage of the design to comment on and guide proposed solutions.

Some specific requirements that have to be met in non-assignable spaces are the following:

> Custodial closets should be located one per occupied floor level and should be large enough to accommodate a floor slop sink, ladder, cleaning supplies, vacuum, mops/brooms & cart. Closets should be stacked above each other and close to washrooms.
>
> A custodial room should be located next to the loading/receiving area and be large enough to accommodate the floor scrubber (with appropriate charging station and dump area – floor drain with curb and ventilation) and storage of bulk items; such as, toilet paper, cleaning supplies & lamps.
>
> A room for custodial staff to provide an office, lunchroom, male and female change rooms with lockers. The area to suit the size of the facility according to criteria set out by Facilities and Services.
>
> At least one voice/data equipment room “Telecommunications Room (TR) is required on each floor. TR’s are to be stacked above each other and be separate from the electrical closets. These will house all voice and data switches. The “Building Entrance Facility” is to be clearly defined and can be one of these rooms or a separate room elsewhere in the building clearly defined. The TR rooms are required to be 7 feet x 9 feet minimum and suitable for housing two free standing 19” racks. These need to be available on all full floors and possibly every second floor for partial or smaller floors. TR rooms are to be linked by risers of a size conforming to U of T standards. The maximum UTP cable length between a closet and point served is 90 meters.

Cable trays are to be accommodated in passageways that feed into the equipment rooms, be readily accessible, and be run straight for maximum distances. Conduit of sufficient size with reserve for future needs is to be utilized to redirect cable and vertical chases.

The building will require a combination of data drops and wireless access points due to the intensive data usage by the Faculty. Hard wired connections will be used for high bandwidth uses such as very large file transfers and intensive graphic applications. Wireless will provide pervasive and convenient general use data connectivity. Flexibility in the system is required as advances in communication technology occur.

Recycling depots are required on each floor, where blue totes can be accessed and stored by custodial staff; totes will be taken down to the delivery area by staff on a regular pick-up schedule by recycling vehicle. These depots should be located next to custodial closets, or defined space with no intrusion into egress routes, and be within easy access of the exterior point of pick up.

The delivery area and loading dock should be elevated at the ground floor level in an enclosed area protected from the elements. Alternatively, the dock can be basement level, if it can be demonstrated that it is warranted, grades can be accommodated and additional consideration is given to ramps for snow and ice melting. This should be located in close proximity to an elevator with capacity for freight.

Anticipate routine delivery by small commercial vehicles, larger straight trucks and on rare occasion 53ft truck and trailer. Small vehicle deliveries, require goods be picked up and placed on a trolley and wheeled through a small service entrance. The loading dock need be no larger than 4m x 3m wide with an adjacent caged storage area of equivalent size to store items in transition into or out of the building.

Waste recycling is preferably handled by compactor, elevated at dock level, sufficient for trucks to back directly under. This also addresses ergonomics of loading. However, it is acknowledged that budgets may not realize this immediately. Anticipate lockable waste removal bins, utilizing either tilt load or hydraulic fork methods of lifting. A minimum of 7.9m clearance is required, measured from the highest grade of the vehicle to the lowest soffit feature in order to prevent damage.

The loading dock and waste recycling area shall take this into account with allowance for a future, minimum 15 cu. yd. compactor along with room for truck movement.

Washrooms are required on every floor; there should be a larger number of fixtures on the ground level where access to the large lecture theatre is to be located. It is proposed to have both men's and women's washrooms as is the norm, but to include a separate unisex accessible washroom that is preferably located between the men's and women's facilities or nearby. The accessibility washroom should also address *parent needs*. The intent is to make the accessible unit sufficiently flexible to meet the intent of the Accessibility for Ontarians with Disabilities Act, by addressing all individual needs, including gender-neutral facilities.

Hydration water filling stations/drinking fountains at the correct height for drinking or bottle filling stations, with a non-tempered water supply, are required on every floor preferably located near the washrooms. The University's Facilities and Services Department has developed best practices for such stations that can be found in the Mechanical Design Standard and the Mechanical Bulletin #2..

At least one passenger elevator and one freight elevator('materials lift') is required, both being capable of accommodating freight [one may be larger] and servicing basement requirements; elevator standard must meet U of T approval.

The mechanical and electrical rooms will be located in the basement of the Heritage building, the attic of the Heritage building and the penthouse of the new building. Smaller mechanical rooms will be located in the basement of the new building to service the fabrication laboratories and for distribution from main mechanical and electrical substations to the new building. Roof top penthouses and equipment are to be hidden from view at all levels, as well as not interfere with the roofline from street level.

Phasing

The project has been planned to facilitate a phased approach. Phase 1 remediates and restore the original 1874 building to be ready for occupancy by July 1, 2014 and is to be delivered in a series of packages. Phase 2 will see the demolition of the later additions to the original structure and the majority of the new construction and will accommodate the remainder of the space program: studios, workshops, lecture theatre, classrooms and the library stacks. The planned pavilions at the northern extent of the site constitute Phase 3 of the project and are near stand-alone components, which can be implemented as funding becomes available.

Phase 1

The original 1874 building is to be remediated and renovated as Phase 1. This work will take place beginning spring 2013, with the intention of moving the administrative unit, faculty offices, a majority of the library, seminar spaces and a limited number of studio spaces into 1 Spadina in the spring of 2014. Based on the current schematic design approximately 2100 nasm of the 6330 nasm space program will be accommodated in renovated space in the original building. As well, a portion of the basement is to be renovated to provide for the infrastructure of the entire project. The budget for this phase was based on a gross area of 4600 sq.m.

Phase 2

In this phase, demolition of parts of the existing building will take place. Additions to the existing building constructed after 1874 are to be removed (approximately 4100 gross sq.m.) Demolition will occur prior to, or concurrent with, the relocation of the administrative unit, faculty offices and the library from 230 College.

Also in Phase 2 the remainder of the 6,330 nasm space program, approximately 4,200 nasm, is to be accommodated in the new facility to be constructed in the courtyard framed by the existing building, on the northern portion of the site. The new construction will house the studio programs, workshops, classrooms and lecture theatre. Connections will be made to the original building at the east and west wings. The budget for this phase was based on a gross area of 6,700 sq.m.

Future Phase 3

Future Phase 3 will see the construction of pavilions radiating out from the Phase 2 construction. A space program has not been included for these pavilions at this stage, nor are they included in the estimated total project cost, but will likely include: expansion of gallery facilities, expanded, specialized workshop labs, a Model Cities Lab and Theatre, and facilities for the Global Cities Institute (incorporating the current Cities Centre).

c) Building Considerations

This section of the report is in three parts – the existing building, areas of demolition and new construction.

Existing Building

One Spadina Crescent lies on the western edge of the St. George campus. Its circular site, north of College Street, is the centre of a roundabout of Spadina Avenue, and an important terminus from both its northern and southern vantages. The existing building consists of an original three-storey 1875 structure, designed by Toronto architects Smith & Gemmell, for use as a college and residence for Knox College. Subsequent additions were constructed in 1914-23 (when the building was used as a military hospital), along with smaller, infill additions to the north and inner east facades between 1943 and 1972 (during its use by Connaught Laboratories), and the addition of laboratories and an animal colony in 1988. The building has been designated a heritage building under Part IV of the Ontario Heritage Act.

This original building is composed of an axially symmetrical central block and square tower with gabled wings along the east and west side. The resulting c-shape created an academic quadrangle facing north with teaching spaces located around its perimeter at the Ground floor. The west wing terminated at the college dining room and the east wing terminated at a 3-storey lecture hall that also doubled as the college chapel. In addition a library (2nd floor) and museum (3rd floor) were located within the central block. The remainder of the spaces were simple sleeping quarters with the benefit of having indoor washroom facilities located at every floor.

The principal aspect of the building faces south along Spadina Avenue, with secondary frontages facing east along Russell Street and west toward the residential district beyond. A 128 space parking lot and Grounds' storage/recycling site currently occupy the north half of the site.

The interior spaces are organized along a 2.5m wide corridor. Originally a single-loaded corridor, the infill additions and sheds on the courtyard edges have created a double-loaded condition. Most of the original interior walls are solid masonry, with some of the larger areas broken into offices with partitions. The existing interior spaces appear to be best suited to offices, seminar rooms and smaller classrooms, given the nature of their construction.

The majority of the existing windows are single hung, non-insulated glass, with original exterior and interior trim and mouldings.

One Spadina Crescent currently has 4704 nasm (or 8716 gsm) of space. However, 921 nasm of this total is located in the basement, and numerous additions were purpose-built for animal

lab and maintenance uses. The basement space is unsuitable for most uses, except storage. Many of the rooms at the basement level are half-height; others are exposed to the original masonry foundation walls and have little or inadequate flooring over the ground below. Some of the later additions and sheds are of poor construction quality, lack proper light and ventilation, and require repair. It is anticipated that the various sheds and additions will be removed in the renovation process.

It is important to note that the Military Hospital wing houses the site's sub-station. The demolition of this wing will require replacement of the substation in advance if the supply of power is to be continuous. Current zoning permissions include only partial demolition of the Military Hospital wing, and full demolition is being negotiated with the City.

The retrofit of the existing building will accommodate a portion of the required spaces needed for the expanded Daniels Faculty facility, with new construction intended to house the bulk of research and fabrication laboratories, and the extensive array of design studio spaces associated with both undergraduate and graduate studies in architecture, landscape and design.

Structural
A structural report was prepared in 2007 by Read Jones Christoffersen:
"In general, the original 1875 building appears to be in good repair with little sign of structural distress, deflection, deterioration, or cracking visible. The structural system of the original 1875 building appears to be a basic and simple system consisting of load-bearing brick masonry walls forming the exterior walls and partitions of most of the rooms, supporting floor structures of 3"x12" deep joists at 18" centres, and a wood plank sheathing floor and timber rafter roof structures."

Accessibility
1 Spadina Crescent is currently accessible from the eastern side, Russell street entry. Most of the existing, original stairs do not meet required fire ratings and/or accessibility standards. They may either be retrofitted or supplemented by complying stairs in the new addition/complex, and reclaiming the original 1874 stairs, converted during Connaught renovations to a freight elevator.

Elevators
There are three existing elevators in the building - two freight and one passenger. Current plans show their removal, and one existing shaft upgraded and refitted with a new passenger cab to service all four levels. One new freight-sized elevator is planned for the new addition to service four levels.

Deferred Maintenance Items
A 2007 Building Envelope Evaluation recommended a number of local repairs to prevent further deterioration and leakage. These included the following:

- Replacing local cracked/spalled bricks and repointing cracked/de-bonded mortar joints;
- Replacing asphalt roof shingles;
- Repair eavestroughs and downspouts should be repaired to address leakage at sheet metal joints;

- Thinning or trimming ivy;
- Sealing and insulating attic floor or roof.

There are several additional aspects of the existing heritage building requiring upgrades associated with deferred maintenance and adaptive renewal. Deferred maintenance has a very precise definition provided by both COU and MTCU. The definition is intended to distinguish deferred maintenance from the term adaptive renewal. Deferred maintenance pertains to replacement of existing building elements when they have exhausted their useful life while adaptive renewal pertains to renovations to a building to bring it up to modern code and general standards or repurposing of a building. (see outline of items following this list):

- Electrical Power System do not meet current standards
- Electrical Panels do not meet current standards
- Heating by Steam radiators inefficient and difficult to control
- The building has no system for fresh air ventilation
- The existing sprinkler system does not meet current code requirements and requires wholesale replacement
- Much of the plumbing is in need of repair, some of the piping is original to the building (135+ years old)
- Existing windows, some original, need to be either substantially repaired or replaced
- Foundations are vulnerable to leakage in some areas
- Hazardous materials are present throughout the existing building, requiring substantial abatement and remediation.

Electrical Power
The building is currently fed with 13.8 kV power from the University's Central Electrical Distribution system at the Earth Sciences Centre via a high voltage sub-station in the North Borden Building to a sub-station in the Military Wing of 1 Spadina. Replacement of the contained sub-station will be undertaken during Phase 1.

Based on the assumptions made regarding function and gross area, it has been estimated that the total demand will be 1,042 kW. This will require a transformer rated at 1,500 kVA (or 2 x 750 kVA). The design team can confirm these figures once the direction of the design becomes more solidified.

Electrical Panels
The existing electrical supply to these is 120/208 volt 3 phase. Many with missing or incorrect directories pose serious isolation problems. All are in need of replacement due to age and lack of replacement breakers and this work will be undertaken in Phase 1.

Emergency Power
Emergency power for the existing building is provided by a 150kW diesel generator installed in 1992, in good condition. There is no need to replace it unless it is determined that a larger capacity is required. However, the fuel system may have to be modified to comply with current TSSA requirements when relocated.

Emergency lights may not be adequate under the present Code. The renovation project will cover the replacement of existing and additional emergency lights to meet current Codes.

Exit lights will be replaced and/or located according to new floor plan layouts.

Heating, Ventilation and Air Conditioning
Heat for the building comes from the Central Steam Plant via a 3 inch 200 psig steam line. Condensate is returned via a 2-inch line from the northeast corner of the building which will be demolished along with the non-original parts of the building. The replacement of this line must be worked into the re-construction project. This existing arrangement allows a maximum capacity of about 6,600 pounds per hour. Recent maximum demand has been about 2,940 pounds per hour. Assuming that the non-original parts of the building will be demolished and replaced by a 6000-gsm addition, it has been estimated that the combined load will range from 2,200 to 3,500 pounds per hour, well within the capacity of the existing line.

The old parts of the building are heated by a perimeter system consisting of steam radiators. This type of system is virtually impossible to control with any level of accuracy and should be changed to a hydronic system, still sourcing its heat from the University's steam plant but incorporating heat exchangers to convert to hot water.

Ventilation is either non-existent or was provided for very specific purposes that will no longer be relevant after the renovations. Therefore, a completely new approach will be required.

Air conditioning is currently supplied by window units, or local DX systems. A small chiller exists to supply cooling 34 rooms on the 1st and 2nd floor, west side of the main building. The animal area has a dedicated cooling/heating unit. There is no availability from other buildings for the supply of chilled water so a new chilled water plant and distribution system would have to be included in the design.

There is a small oil-fired boiler system intended to provide heat to the animal colony during periods when the main heating system is shut down. It will be removed during demolition.

Controls are pneumatic and need to be replaced with a BACNet controls package for connection to the Facilities and Services LAN.

Plumbing
Some washrooms have been fitted with newer electronic flushometers and faucets. Older style flush tanks for urinals add to heavy water usage. Many isolation valves throughout the building need to be replaced. Sediment separators on sinks are needed within art studios. Much of the domestic water pipes and drains in the basement level are original and in need of replacement.

Fire Protection
The existing standpipe system is in good condition, and is served by a fire pump that is likewise in good condition. This will need review in the context of the new building and current codes. Siamese connections for both the sprinkler and standpipe are in good repair. A

new location for the Siamese connection and annunciator panel will be designed and located at the new primary entrance of the completed building, likely the east side, near Russell St.

The sprinkler systems in the building are dry pipe systems, zoned vertically (basement to attic in 5 areas of the building), and are approaching 70 years of age. As such, for a major renovation, their replacement would be necessary, since vertical zoning is no longer permissible by Building Code and any sprinkler head additions or additional pipe runs to accommodate changes in assigned space would therefore not meet Code requirements nor could hydraulic calculations be carried out properly. Additionally, dry pipe systems are higher maintenance, more expensive, and are highly prone to corrosion and decay, and typical demolition work associated with renovations would likely produce a plethora of issues related to the integrity of the existing sprinkler systems due to their age. All piping, valves and sprinkler heads will require redesign and replacement.

An appropriate sized sprinkler fire pump needs to be installed to supply flow according to the design parameters of these new systems (there is no sprinkler fire pump currently, a pre-existing yet acceptable condition since no major renovations have triggered a change in the recent past). To ensure adequate supply during a fire, flow tests will be required at the hydrant (City street) to confirm available volume and pressures.

The building fire alarm system is no longer supported by its manufacturer, and has been maintained for a number of years via stock parts removed from other buildings as their own respective obsolete systems have been replaced. A replacement of the fire alarm control unit and remote annunciator is required to meet Code (note: sprinkler system replacement would also trigger this). Existing conduit, and some devices (pull stations) could possibly be re-used, with the exception of smoke detectors (there are few) and bells (which would be changed to combination horn/strobes). Modern systems are addressable, two stage devices. Existing wiring needs to be evaluated.

Fire separations for exit stairs and interconnected floor spaces (i.e.- the central stair), as well as exiting provisions will need review and may require some specifically engineered solutions or compliance alternative proposals, subject to the approval of the Authorities Having Jurisdiction.

Roofing

The roof consists of a combination of asphalt shingles and built up flat roofing. Major sections of flat and sloped roofs along with flashings and downspouts are in need of replacement. Redundant exhaust fans and HVAC units remain in place although they have not been in use for many years. There is evidence of water penetration into studio spaces from deteriorated sloped roofs. Flat roofs are covered in vegetation in several areas. Repairs will be addressed in Phase 1.

Exterior Envelope

The envelope is a mixture of solid brick and stone, brick and block and wood frame construction. The general condition of the exterior cladding is good although there are many localized areas of spalling brick work. Some interior plaster damage has resulted from water migration into the building. Repairs will be addressed in Phase 1.

Windows
Wood framed, double hung, single pane, gothic arched. Many are in need of replacement and/or substantial repair due to age-related deterioration and water damage. Existing windows have lead paint and asbestos caulking. Due to the lack of central HVAC many rooms have had window sleeved air conditioners installed. This has led to further deterioration of exposed sills. A comprehensive evaluation will be undertaken as part of the Phase 1 design work, and a strategy developed for repair and/or replacement of the windows.

Basement
For the most part, the basement will remain as is. However significant renovation will occur in two primary areas to accommodate new electrical and mechanical rooms that will service the full scope of the project (Phases 1-2).

Room 13 will be excavated to provide a new electrical room. The existing concrete benching will be removed and the masonry wall will be underpinned. A new area well will be provided on the east wall of this room. The height required for this space will necessitate entry from the basement level via new stairs, to be located at the northern extent of the room, and through the adjacent Room 14. A second room, currently unnumbered, will be excavated to provide a new mechanical room. This space is half-height and will require unpinning as well. Existing masonry walls and columns within this crawl will be demolished. Two new area wells will be provided on the south wall of this room.

Some selective demolition will occur in the two areas on either side of the main stair to accommodate new electrical, IT and janitor closets. In addition, Rooms 16, 17, 19 and 20 will be retrofitted to accommodate the Main IT Room, Sanitary/Sump Room, Incoming Fire Prevention Water Room, and Domestic Water Room, respectively.

Foundations
The stone foundation has evidence of water penetration in some areas. Seepage and efflorescence are visible on the interior.

Hazardous Materials Disposal
An overview of the presence of asbestos-containing materials within 1 Spadina will be provided. Detailed information can be obtained from the University's asbestos inventory system. Asbestos has been removed in recently renovated areas. All areas of the building that will be renovated within the scope of this project will require asbestos abatement. A pre-construction survey was carried out in 2012. A significant program of abatement is underway.

Identification of areas of demolition

The plan proposes demolition of all additions post-1874, including the Military Wing. A portion of the original 1874 structure (the courtyard portion of the original dining room, and associated kitchen facilities to the north,) is also proposed for demolition, in order to accommodate the central studio floorplate in the centre of the new facility. Approximately 4,100 gross sq.m. is to be demolished.

New Construction

Based on the set budget, the new addition, 6,700 gross square metres, will be inserted into the northern courtyard space formed by the three sides of the 1874 building. The addition will be three storeys, with one level of basement. Additional pavilions spreading out from the core on the ground level are planned for later phases.

The addition's ground level will be organized around a public "street" running east-west, in line with access from Russell Street to the east. Auditorium, loading, shop and lounge/cafe areas will occupy the ground floor of the addition. The main entrance to the Faculty will be at the eastern end of the street, leaving the entrance to the original 1 Spadina structure primarily ceremonial in function. A service entrance will be required. Consideration must be given to the suitability of the existing north vehicular entrance; if a new entrance is required, the impact of such on traffic movement must be considered.

A central stair will connect the 'street" to the studios on levels 2 and 3. Connections to the original 1874 structure will occur at the western and eastern ends of the restored single-loaded corridors, and at the central staircase. A fully compliant means of egress will be required. Existing stairways need further study.

Floor to floor heights are expected to be: basement: 3.4m,, ground floor: 4.85m; second floor: 4m and third floor: 3.58m

Basement
In Phase 2, the schematic design is proposing a partial basement to be constructed at the northern extent of the addition. This section could house the fabrication facilities and have access to the exterior, where grade has been sloped down to meet the basement floor (approximately 3.4m). Separately a basement area will be provided for the library stacks, as funding allows. This new construction will occur below the principal hall, and abut the courtyard side flanks of the original building.

Structural complexity and built form
The new construction will be three storeys and will be structurally independent of the existing building. The upper two floors will be open floor plates, supported by structural systems spanning north-south between rows of columns. The roof system will be a clear-span exposed steel truss.

Material selection
The exterior cladding will be a combination of glass and opaque panels that allow for daylighting of interior spaces, while achieving optimal environmental performance. Skylights will be strategically placed with operable windows facing north to enhance daylighting.

Project Boundaries
The project will be contained on its own site.

Personal Safety and Security

The diverse nature of activities at the Faculty of Architecture, Landscape and Design requires a design for the building that ensures appropriate levels of accessibility to the building as a whole. This building will be operational throughout the week, 24 hours a day. The building design must allow its students, faculty, staff and visitors' access as required and as allowed, safely and easily. At the same time, the design must be sensitive to the needs of those – primarily graduate students - whose activities require security after hours. A detailed security plan will need to be developed for each room, zone or floor, and factored into the design of the building to ensure functionality, accessibility and security objectives are all met simultaneously. For safety in open space, 'code blue assist' stations presently exist, but may need relocation based on new plans.

One Spadina Crescent is surrounded with buildings consisting of the following: The Center for Addiction and Mental Health, the Scott Mission men's shelter, the Waverly Hotel, night clubs, a public school, UofT academic and administrative buildings and residential housing. Due to the diversity of the surrounding buildings, numerous non-community members frequent the building. Although the demolition of much of the existing structure and subsequent renovation will undoubtedly solve many of the interior way finding and light level problems, special attention to access and egress as well as outdoor lighting and safety measures must be included in order to help mitigate the perceived unsafe nature of community access.

Computing and Communications
The Faculty of Architecture, Landscape and Design is progressive in the use of computer technology and has invested considerable resources to maintain up-to-date IT services and facilities. A variety of systems and resources support a seamless student experience, the scholarly success of faculty, and effective functionality of administrative staff. The new complex will require an extensive, but highly flexible infrastructure for digital information and fabrication technologies.

Parking
No permanent parking is planned for the site. A paved ring ("woonerf") allowing continuous pedestrian crossing, and limited vehicle access at the outward extents of the site will provide for servicing and bike access, as well as passenger drop-off.

d) Site Considerations

One Spadina Crescent is located within the University of Toronto Area Secondary Plan, on Spadina Circle, north of College Street. It is located in a particularly prominent location within the city and the UofT campus, acting as a terminus to the view both north and south along Spadina Avenue and a minor view terminus to Russell Street and in alignment with Simcoe Hall/Convocation Hall to the east.

A water easement running north-south on the east side of the site has caused some difficulty in the planning of future development on Site 7 (see Figure 2). Two transmission high-flow, high pressure water mains (900mm and 1200mm with a 2m easement on either side) run along the east side of the heritage structure and cut diagonally across the east portion of Site 7. According to Toronto Water officials, if failure of one of the water lines were to occur, it would likely be "catastrophic failure" causing major damage on site and off site. Foundations for the new construction must be designed to accommodate the easement. Precise locates for the line should be acquired from City and Toronto Water officials early in the design phase.

The building and surrounding landscape are in need of significant improvements to make the propose use safe, accessible, and in line with current University standards. As part of the University of Toronto Open Space Master plan, "Investing in the Landscape" (1997) Spadina Circle and Russell Street have together been illustrated as a demonstration site to achieve a landscape of landmark quality, a significant, distinctive, pedestrian-oriented gateway to the West Campus and an enhanced east-west pedestrian connection along Russell Street.

The Open Space Master plan identifies the Spadina Circle–Russell Street intersection as a significant gateway to the southwest part of the campus. Traffic calming measures are suggested to create better and safer conditions for pedestrians. A signaled crossing has been located between Russell Street and Spadina Circle. It is intended to extend this closure to the northern point of the circle, creating a plaza-type crossing at this quadrant.

Zoning

In 1999, a Secondary Plan for the University of Toronto Area was approved by City Council. This was a joint effort by the University of Toronto and the City of Toronto to identify development sites within the area of the University campus. The northern half of the circular site was designated a development site (site 7) with detailed envelope requirements (see Appendix F). The area designated for development allows for the removal of the military wing and the animal facilities and assumes a maximum height of 18m construction at the center of the site with lower flanking construction not to exceed 12m in height.

The University undertook an update to the St. George Campus Master Plan, approved by Governing Council in June 2011, which included analysis and revisions to the development site envelopes. Responding to strategies outlined in the City's Official Plan and to development in the adjacent neighbourhoods, new zoning envelopes have been proposed for existing and new development sites, which follow planning principles identified by recent project planning committees and guidelines previously approved by University Governance.

However, the scope of the proposed plan for 1 Spadina is such that the project will not require re-zoning. The permissions to build outside of the approved 1997 envelope can be achieved through a Committee of Adjustment application, as they are minor in nature. The University and the Daniels Faculty are committed to developing the One Spadina Crescent in a manner that respects the prominent nature of this unique site, and in a way that sets a standard for, and augers a new future for the western half of the St. George Campus.

Other City Approvals

The design proposes to demolish a portion of the original 1874 building: specifically a portion northwest kitchen wing. The courtyard portion of the original dining room, and associated kitchen facilities to the north, are proposed to be removed in order to accommodate the central studio floorplate in the centre of the new facility. The 1997 zoning permissions were negotiated with retention of the entire 1874 structure; therefore Heritage Preservation Services will need to approve the additional demolition.

As part of its statutory Five Year review of its Official Plan, the City of Toronto is adopting new Heritage and Public Realm Policies to reflect current province legislation. As part of these policies, the City has identified a number of views to prominent buildings, structures and landscapes. One

Spadina is included on this list; specifically the view to the spire of the building must be preserved from Bloor Street (south-east corner) and at Sussex Avenue. Also under consideration is the preservation of the silhouette of Knox College from Spadina Avenue at Queen Street

Soil conditions

In the fall of 2012, Terraprobe conducted a geotechnical investigation, including drilled boreholes, on the site. Their report is attached to this document as an appendix. The proposed new construction includes one level below grade. The investigation noted that the depth of this construction would come within near proximity of the water table and advised that waterproofing will be necessary. Sump pumps will be required with emergency power where critical infrastructure is housed.

Trace amounts of vinyl discovered in the water and wells will continue to be monitored for contaminants. The source of the vinyl is unknown and likely off-site, as it was not discovered in the soil matrix from samples above the water table.. The soils contained some fuel-contaminated staining, likely a remnant of pre-university ownership. No present fuel contamination was discovered.

e) Sustainability design and energy conservation

University of Toronto buildings are significant assets and are expected to have long life. During their life cycle, operating costs and maintenance practices need to be efficient and appropriate. Consequently, efficiencies in heating, ventilating, lighting and cooling are very important. Additionally, water consumption and waste collection and handling require careful consideration and reduction. Overall energy usage efficiency should drive the design.

In consideration of the various forecast trends and targets for building energy efficiency, the Daniels Faculty PPC has the opportunity to elect a suitable energy use intensity to guide the design, construction and commissioning of future improvements and expansion. To monitor and verify the effectiveness of the conservation measures, sub-metering of electrical and thermal (i.e. heating and cooling water) loads must be incorporated into the design.

Best practices for the assessment of costs and benefits associated with investments in building improvements utilize life cycle cost analysis according to the methodology set out in *ASTM E 917 Measuring Life Cycle Costs of Buildings and Building Systems*. It will be important to explicitly establish the basis for assessing cost effectiveness for proposed improvements.

In addition to energy performance, it may also be desirable to establish targets for resources such as potable water consumption, storm water runoff, solid waste disposal, etc. In some cases, performance is specified by the exclusion of materials and practices. For example, a wide range of environmental health policies of local and national governments and international treaties have identified a high priority set of chemicals to eliminate due to their high toxicity and global impact.

Environmental performance targets ultimately reflect ecological carrying capacity and meaningful economic assessments that consider the life cycle of buildings. They also imply performance parameters that go beyond energy efficiency, and the adoption of design thinking that views buildings holistically over time as cultural resources. The origins of sustainable stewardship reside with the Project Planning Committee of the Daniels Faculty to establish future directions in the planning and design of the new facility.

The summary of performance objectives below is an abridged outline derived from a June 6, 2012 draft report that discussed the social, environmental and economic performance ambitions for the proposed new Daniels Faculty at 1 Spadina Circle (see Proposed Daneils Performance Matrix Attributes, Indicators and Targets below). It assumes that instead of pursuing existing building performance rating systems, Daniels would develop its own hybrid performance assessment matrix to inform the design, procurement, commissioning, operations and maintenance of the new facilities. It is important to recognize that while some aspects of this assessment protocol may be applicable to the retrofit of the existing historical building, this performance assessment matrix is intended for the new construction portions of the facilities. However, the conservation and preservation of the existing building are viewed as positive contributions to the overall project assessed qualitatively along with the other quantitative performance indicators.

The performance objectives and project goals are intended to guide the work of the Daniels Project Planning Committee and its designated consultants in the preparation of an appropriate schematic design that may be reviewed to assess the feasible level of performance that may be obtained given programmatic, fiscal, technological and site constraints. There must then be consensus acknowledgement that the subsequent design development and construction document stages may proceed having achieved the best possible predicted outcome, all factors considered.

Performance Objectives
The fundamental assumptions about the performance objectives for the proposed new Daniels faculty facilities are:

1. Conservation of material, water and energy resources while minimizing ecological footprint and life cycle costs;
2. Promotion of occupant health, well-being and productivity through the provision of a high quality indoor environment, safety/security, accessibility, functionality and flexibility/adaptability; and
3. Contribution to the social and cultural heritage of the University and the City of Toronto through the integration of best practices in urban design, architecture and landscape.

To meet these objectives, specific project goals were set:

- Lowest possible life cycle cost on UT St George Campus (utilizing available reference data for comparison).
- Energy Use Intensity target range of 80 -120 ekWh/m2/year (equivalent kilowatt hours per m squared per year)
- Target of minimum 70% energy performance below the MNECB (Model National Energy Code), which will require significant, integrated energy efficient design
- The project's design will be cognizant of and have regard for the carbon reduction targets of the *AIA 230 Challenge*
- Consulting team will include an expert consultant on "high performance environmental design and sustainability" who will be expected to interact with colleagues within the faculty, as well as the design team on setting of targets and verification measures
- Energy modeling to demonstrate work-in-progress environmental performance in the early design stages as well as post tender
- Follow LEED checklists for Indoor Environmental Quality targets and measures

The faculty has set a goal of 70% below the Model National Energy Code (MNECB) or inversely, 30% of the MNECB. This 30% of the MNECB is quite a bit lower than the legislated requirements and will be difficult to achieve but achievable depending upon the cost level that will be considered acceptable.

The matrix of proposed performance indicators that follows is a hybrid derived from several performance assessment protocols reviewed in the June 6, 2012 draft discussion paper. It should be viewed as a living document that can be refined and augmented on an as required basis throughout the design process. It can evolve and guide the Daniels faculty along a migratory path of continuous performance improvement as time, resources and the state of technology permit. It should be viewed as a resilient, transformable building platform (what Daniels Professor Ted Kesik refers to as a "cybernetic prosthesis') for promoting multiple, positive feedback loops over the life cycle of the proposed facilities, and beyond.

The University's Department of Facilities and Services will also be a critical participant in evaluating and assessing the proposed solutions to meet the intent of the stated performance objectives and project goals. For example, in a recent review it was noted that, in the matrix under Socio-Cultural, the target of 24/7 surveillance/monitoring and an occupant alarm/alert systems was indicated. Although Facilities and Services provide primarily passive and forensic surveillance and monitoring as well as exterior assist stations, it was noted that if the Faculty wishes to install and operate enhanced systems beyond the services provided by the University it will be necessary for the Faculty to engage outside contractors to install and operate.

Proposed Daniels Performance Matrix Attributes, Indicators and Targets

The proposed attributes, indicators and targets listed below assume best available technologies and design/construction/facility management practices define the highest performance benchmarks.

Attribute	Indicator	Target
Ecology/Environment	▪ Greenhouse Gas Emissions	▪ Low 5th percentile at U of T
	▪ Water Consumption/Harvesting	▪ Ultra-low flow fixtures ▪ Net-zero irrigation
	▪ Stormwater Management	▪ Retain all flows on site
	▪ Waste/Effluent	▪ Materials policy for staff and students
	▪ Materials (Health and Resource Conservation)	▪ Local, renewable, recyclable ▪ Durable and low VOCs
	▪ Embodied Energy	▪ Minimize petroleum intensive materials (i.e., plastics)
	▪ Location (Transportation, Services, Amenities)	▪ Convenient access to public transportation
Socio-Cultural	▪ Health, Comfort and User Friendliness	▪ Daylighting & natural ventilation ▪ Wayfinding / signage
	▪ Accessibility	▪ As per Ontario Disabilities Act
	▪ Safety/Security	▪ 24/7 surveillance / monitoring ▪ Occupant alarm/alert
	▪ Heritage/Local Context	▪ Conservation of existing building ▪ Respect for Annex precinct
	▪ Aesthetics	▪ High quality architecture, landscape and urban design
Economy (Cost-Benefit)	▪ Life Cycle Cost ($/m^2)	▪ Lowest for U of T St. George
	▪ Affordability	▪ Design within means, stage development accordingly
Functionality/Operability	▪ Durability	▪ Top 5th percentile service life
	▪ Flexibility/Adaptability	▪ Architecture as institutional infrastructure (armature)
	▪ Utilization Efficiency	▪ Maximize multi-purpose programming
	▪ Ease of Operation and Maintenance	▪ Occupant controlled environment ▪ Easy access for maintenance, repair and replacement
Energy	▪ Annual Energy Use Intensity	▪ Between 80 and 120 ekWh/m^2.year
	▪ Electricity	▪ Primary energy source
	▪ Fossil Fuels	▪ Minimize carbon footprint
	▪ Renewable Energy	▪ Provide for future connectivity and integration
	▪ Annual Energy Cost Index	▪ Low 5th percentile at U of T
	▪ Savings vs Code/Reference Standard	▪ Minimum 70% less than MNECB
Process	▪ Quality of the Planning/Design Process	▪ Public/community review ▪ Peer review
	▪ Quality Assurance (Construction and Commissioning)	▪ Building envelope QA ▪ HVAC commissioning
	▪ Facilities Management/Governance	▪ Permanent Daniels building committee

Proposed performance attributes, indicators and targets for Daniels new construction.

f) Campus Infrastructure Considerations

Utilities (electrical, water, gas, steam lines)
In 2003, Toronto Hydro installed a 13.8 kV duct bank up St. George Street to serve new building planned for the campus, including the planned re-development of 1 Spadina. A spur duct bank for this purpose terminates at a manhole on the northeast corner of Russell Street and Spadina Crescent. To serve the 1 Spadina site, Toronto Hydro will have to extend this duct bank under the road and streetcar tracks. The sub-station constructed as part of the new works on the site must comply with Toronto Hydro's standards.

The costs of the Toronto Hydro duct bank were paid by the University in advance, with the understanding that as each project is implemented, it will reimburse the University for a proportionate share of the cost. The project for the Relocation of the Faculty of Architecture Landscape and Design to One Spadina Crescent is to be charged this reimbursement cost. In addition, Toronto Hydro will also charge a fee to connect the service.

It may be possible to continue to feed the project through Phase 1 (i.e. the renovated heritage portion of the building) from the University's central electrical distribution system, sourced from the high voltage substation in the Borden Building. However, any further phases (i.e. any new construction) will require the project to be fed from the Toronto Hydro infrastructure as noted above.

There are existing steam lines to the building, brought from the central Steam Plant, crossing the north east quadrant of the property. These lines will require rerouting from the limits of the property.

Testing of the water service to determine the adequacy of the suppy will be conducted as soon as the City will allow in the spring of 2013. The flow test is necessary to verify the fire protection scheme.

Communications (phone/data)
The current infrastructure will not meet the needs of the Faculty. The communications backbone will need to be upgraded to support the Faculty's activities and intensive information usage at peak times. The current cabling infrastructure to the building is not routed in the preferred location and may be replaced. The existing cable originates in the Earth Sciences complex with an intermediate connection point in the basement of North Borden. The preferred option would be to establish a direct feed to ESC from One Spadina but removing and re-establishing just the link from One Spadina to North Borden is also a less desirable possibility. The direct link to ESC would be more robust and provide a better growth path

Bicycle parking
Students and faculty at Daniels are significant users of bicycles for transportation and require sufficient secure bicycle parking areas to meet their needs. It is anticipated that appropriate bicycle parking will be provided on site and is expected to exceed minimum requirements of the City of Toronto's Green Standard.

Servicing and fire access
The site currently is accessed directly from the north up Spadina Avenue, but within the ring of Spadina Circle and the TTC tracks. Based on conceptual design and current concepts this may or may not provide adequate entrance to service the building, pending loading docks for deliveries and

waste handling requirements. The main service entrance is proposed to be located on the north west quadrant, in a more westerly direction. A landscaped pathway will ring the edge of the site and be sized to allow for fire vehicles to access the building from all directions. The main fire entrance will be a landscaped paved pathway from the east, opposite of Russell Street, on the northeast quadrant.

g) Secondary Effects

The relocation of the Daniels Faculty to 1 Spadina required that the building's current occupants relocate to other space on campus. Over the last year the existing occupants (FAS Math and Psychology facilities, Grounds, Parking Office, the Newspaper, etc.) in a total of 4813 nasm have all been relocated to new accommodations to make way for the DFALD project. In particular, the Visual Studies Program has been moved to newly renovated space in the North and South Borden buildings. By March 2013 the building will have been cleared and ready for the first phase of the project.

In addition to spaces occupied within the existing building, a significant amount of exterior grounds are occupied by units and will require re-accommodation elsewhere. 800sm of exterior space is used by Waste Management/Recycling in an open yard holding garbage containers and recycling containers for scrap wood, metal, and asbestos and other recyclables. Grounds Services occupies approximately 500sm of exterior space in an open yard area containing storage bins for salt, top soil, bark mulch and many miscellaneous materials required for infrastructure repair including bollards, bricks, etc. In addition, a covered shed (90sm) is located in this area accommodating small vehicles and equipment and two diesel gas tanks (20sm) are located on site. In total 1410sm of exterior space is currently allocated in this location. Planning is underway to relocate all of these operations to other locations and will be complete for the start of demolition/construction.

The removal of 111 parking spots at 1 Spadina is a significant loss of parking in this area of the campus - 4 spaces are reserve, 61 are Lot reserved and 46 are Unreserved. A number of these spaces will be removed as part of Phase 1. Phase 2 demolition will commence in approximately 1 year, hence the lot will be completely shut down sometime during winter 2013/14. This will result in a loss of revenue for Ancillary Services. The current University of Toronto Area parking bylaw requires that the University maintain between 1932 and 2132 parking spaces on campus, and current numbers are at the lower limit. The University has engaged a consultant to prepare a Transportation Study, as part of its update to the University's Secondary Plan. As part of this study, the consultant is reviewing overall parking numbers and distribution, and will make recommendations to address the potential conflict with the parking bylaw.

The Faculty will also be required to move out of its existing facilities at 230 College by July 1, 2014, so that work can begin on the building's conversion to the Student Commons. Temporary space is therefore needed for a minimum of two years. The Laidlaw Wing at University College and 704 Spadina (owned by UTAM) have been identified as sites, which can temporarily provide studio, workshop and crit space for the Faculty. Plans are being developed that lightly renovate both spaces in order to make them suitable for the needs of the Faculty. As well space has already been assigned for "hot desk' or 24 hour drop in workspace for the undergraduate students in 300 nasm, at 665 Spadina Avenue.

The resource impact of these relocations and temporary accommodations are discussed below.

Visual Studies will be transferred from the Faculty of Arts and Science to DFALD potentially by July 2013. The department has recently moved into the North and South Borden buildings, into space that was renovated to accommodate their program. The department will remain in these buildings throughout the duration of the full construction period. The Faculty of Architecture, Landscape, and Design will assess shared space opportunities, synergies and compatibilities. The Borden buildings and One Spadina site will ideally operate as an Architecture, Art and Design district on campus, with activities flowing on and between both sides of Spadina Crescent.

h) Schedule

University Governance Schedule

- CaPS Executive approval for early works/design – January 2013
- Governing Council approval for Phase One– Renovation of Heritage Building at One Spadina – May 2013
- Governing Council approval for Phase Two – Demolition and Construction of New DFALD Building - Fall 2013

Project Schedule

- Abatement: Winter 2013
- Design Drawings: Winter 2013
- City Approvals:
    - Submit for internal renovations at 1 Spadina: March 2013
    - Submit for Site Plan Approval: March 2013
    - Building permit for internal renovations: May 2013
    - Site Plan Approval: Winter 2014
- Construction Phasing:
    - Phase 1 - Internal renovations at 1 Spadina: June 2013
    - Occupancy Phase 1 – Summer 2014
    - Phase 2 - Demolition: Winter 2014
    - Continuation of Phase 2 - New Construction: Spring 2014
    - Occupancy Summer 2015

IV. Recommendations

Be It Recommended to the Academic Board:

1. THAT the Project Planning Committee Report for the Relocation of the John H. Daniels Faculty of Architecture, Landscape and Design to One Spadina Crescent, dated March 29, 2013, be approved in principle.

2. THAT the project scope totalling 4,600 gross square metres (approximately 2,100 nasm), be approved in principle for the First Phase, to be funded by the Capital Campaign, Provost Central Funds, Graduate Expansion Funds, Deferred Maintenance Fund and Borrowing.

Appendix A/COU Analysis/DFALD

COU/UofT Space Calculations				
	FTE Existing	**FTE Projected**	**Space factor**	**NASM Generated space**
STUDIOS				
Graduate - March	270.3	271.3	7.5	2,035
Graduate - MLA	79	76	7.5	570
Graduate - MUD	14	23	7.5	173
Graduate - PhD	0	20	7.5	150
Non-Degree	1.3	2.2	7.5	17
Faculty	31.07	48.07	1	48
subtotal - Graduate	364.6	392.5		2,992
Undergrad - BA	284.6	511.8	1.6	819
subtotal - Undergrad	284.6	511.8		819
Subtotal	**649.2**	**904.3**		**3,811**
*Total # FTE graduates students * (4 nasm office +25% support + 5/2 nasm research lab as per half COU space factor for group D vs group E)*				
UG studio= .3 nasm per wsch, Winter 2013 = 933 wsch; assume increase to 2730 wsch or 5.33 hrs per wk average per all FTE UG				
Studios include scheduled, unscheduled and support space				
OFFICES				
FTE Faculty	31.07	48.07	13	625
Non-Academic staff	18.67	25.67	13	334
# Sessional Courses per term	11.6	17.4	1.625	28
Office Support space (25%)		987	0.25	247
Subtotal				**1,234**
Note: Sessional space is calculated by taking the number of courses taught by sessionals and assigning 8 courses/per office space				
CLASSROOM				
Graduate Students	364.6	392.5	0.46	181
Undergraduate Students	284.6	511.8	0.738	378
Subtotal				**558**
Grads average 6 hrs. per scheduled a week in classroom (vs studio)				
UG average 9.6 hrs. per scheduled a week in 1 Spadina classrooom (vs studio and OSM)				
LIBRARY				
Volumes	30000	39000	0.005	195
Study space	649.2	904.3	0.2	181
Library support space		376	0.25	94
Subtotal				**470**
Study space reduced as study also occurs at stations in studios				
LOUNGE, EXHIBITION, CLUB SPACE				
Lounge, Exhibition, Club space	649.2	904.3	0.3	271
Subtotal				**271**
Space factor is system average				
BUILDING TOTAL				**6,344**

Appendix B/COU Analysis/Visual Studies

COU/UofT Space Calculations			
	FTE		**NASM**
	Projected	**Space factor**	**Generated space**
STUDIOS			
FTE VMVS (incl office allowance)	16	10	160
Faculty	7.05	10	71
Undergrad - (Spc,Maj)	136.4	3.6	491
Subtotal			**722**
*Total # FTE graduates students * (4 nasm office +25% support + 5 nasm research lab as per half COU space factor for group D)*			
UG studio= .6 nasm per wsch, assume 6 scheduled studio hrs per wk per FTE UG spc and maj			
Studios include scheduled, unscheduled and support space			
OFFICES			
FTE Faculty	7.05	13	92
Non-Academic staff	0	13	0
Office Support space (25%)	92	0.25	23
Subtotal			**115**
CLASSROOM			
Graduate Students	16	0.46	7
Undergraduate Students	136.4	0.46	63
Subtotal			**70**
Average 6 hrs. per scheduled a week in classroom at Borden (vs studio)			
LOUNGE, EXHIBITION, CLUB SPACE			
Study space	152.4	0.2	30
Lounge, Exhibition, Club space	152.4	0.3	46
Subtotal			**76**
Space factor is system average			
BUILDING TOTAL			**982**