



FOR RECOMMENDATION

PUBLIC

OPEN SESSION

TO: Planning & Budget Committee

SPONSOR: Professor Scott Mabury, Vice President, University Operations

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DATE: May 11, 2016

AGENDA ITEM: 5(a)

ITEM IDENTIFICATION:

Lab Innovation for Toronto (LIFT) Project - St. George Campus: Project Approval and Funding Sources

JURISDICTIONAL INFORMATION:

Pursuant to section 4.2.3. of the Committee's Terms of Reference, "...the Committee considers reports of project planning committees and recommends to the Academic Board approval in principle of projects (i.e. space plan, site, overall cost and sources of funds)."

Under the *Policy on Capital Planning and Capital Projects*, "...proposals for capital projects exceeding \$10 million must be considered by the appropriate Boards and Committees of Governing Council on the joint recommendation of the Vice-President and Provost and the Vice-President, University Operations. (...) Normally, they will require approval of the Governing Council. Execution of such projects is approved by the Business Board. If a project will require financing as part of the funding, the project proposal must be considered by the Business Board."

GOVERNANCE PATH

A. Project Planning Brief

1. **Planning and Budget Committee [for recommendation] (May 11, 2016)**
2. Academic Board [for recommendation] (May 30, 2016)
3. Business Board [financing, for recommendation] (June 16, 2016)
4. Executive Committee [for endorsement and forwarding] (June 14, 2016)
5. Governing Council [for approval] (June 23, 2016)

B. Execution of the Project

1. Business Board [for approval] (June 16, 2016)

PREVIOUS ACTION TAKEN:

No previous action taken.

HIGHLIGHTS

The Post-Secondary Institutions Strategic Investment Fund (SIF) is a time-limited federal program that will provide up to \$2 billion to accelerate strategic construction, repair and maintenance activities at universities and colleges across Canada. The SIF aims to generate direct economic activity and to enhance the research and innovation infrastructure at post-secondary institutions.

Projects eligible under the SIF are those that support the enhancement, expansion, new construction and repair of infrastructure assets at post-secondary institutions. Projects are expected to be substantially completed by April 30th, 2018, and must correspond to at least one of the three program categories below:

- a) Improve the scale or quality of facilities for research and innovation, including commercialization spaces used by industry;
- b) Improve the scale or quality of facilities for specialized training at colleges focused on industry needs;
- c) Improve the environmental sustainability of research and innovation related infrastructure at post-secondary institutions and college training infrastructure.

Total funding from federal sources will cover up to half (50%) of the project's eligible costs.

The University of Toronto proposes an urgent, tri-campus renewal of research labs across nine divisions. The labs rejuvenated by the U of T Lab Innovation for Toronto (LIFT) project are on average 50 years old and comprise approximately 54,300 square metres of grossly inefficient space. The project will result in 561 fully renovated labs, which will provide state-of-the art research facilities to an estimated 800 researchers, 4,500 graduate students and 1,100 undergraduates.

While specific work will vary across each renovation component, all share the goal of modernizing our labs to increase usable space and enhance its quality. The renewed labs will be designed to support collaboration, flexibility of space allocation, and will support integrated basic science research platforms. Modernized floor plans will encourage proactive interaction and support, open discussion and cooperation. The revitalized research labs will also provide improved research grade laboratories with equipment and support rooms that will be used jointly by faculty, post-doctoral fellows, graduate students and undergraduates. Finally, the consolidation and revitalization of these research labs will address basic infrastructure improvements such as air handling, climate, and electrical systems, which are currently overloaded and inefficient.

This project will eliminate perpetual barriers to breakthrough discovery and transform U of T's capacity to contribute to Canadian innovation. The key benefits of the U of T LIFT project will be realized through increased basic science discoveries, applied research innovations, commercialized products, spin-off companies, new and expanded industry partnerships, and more sophisticated research training opportunities for our students and graduates.

In the immediate term, the U of T LIFT project will generate significant direct economic activity and job creation in the Toronto region. The project will also produce on ongoing savings of at least \$3 million per year in utility expenses and reduce our environmental footprint by a minimum of 5,400 tonnes of eCO₂. Revitalizing these existing assets to serve the demands of 21st century science is a highly cost-effective approach to supporting the needs of the Canada's evolving knowledge economy, and will save an estimated \$450 million over the cost of constructing new research facilities.

Due to the accelerated nature of this program and the deadline for the applications, the project components do not have full project planning reports. Briefs have been prepared for each individual component that detail scope of work.

St. George Campus Components

Faculty of Arts & Science

1. Ramsay Wright

NASM: 5357 Researchers: 158

A total of 26 labs will be renovated in the Ramsay Wright Building. Cell & Systems Biology and Ecology and Evolutionary Biology research labs on the 3rd, 5th and 6th floors will be renovated to meet current standards and consolidated into one space (currently EEB has space in Earth Science building). Research support spaces including the Aquatics facility, Vivarium and Microscopy Suite will be renovated and expanded.

Current Psychology teaching labs on the 3rd floor will be renovated and converted into wet research labs for faculty currently working in the basement.

2. Lash Miller Sustainability Upgrades

NASM: 16,730 Researchers: 75

This project will reduce energy consumption and modernize the infrastructure in the Lash Miller Building. The work includes new ventilation, cooling, fire protection, building controls, lighting and electrical supply.

3. Koffler Scientific Reserve Lab Expansion in Racing Barn

NASM: 535 Researchers: 38

This project will take the remaining 75% of an inhabitable racing barn and transform it into a modern research facility. 3 dry labs will be created and new roof top 60 kw solar panels will be installed.

Dalla Lana School of Public Health

1. Research Lab Renovation

NASM: 400 Researchers: 15

10 discrete labs will be renewed in Gage Building, and the mechanical systems will be upgraded. Two additional laboratories will be created from currently unused space in the basement of the building.

Daniels Faculty of Architecture, Landscape, and Design

1. Expansion of Grit Lab

NASM: n/a Researchers: 8

The expansion of the GRIT Lab will be housed at One Spadina Crescent and include both roof and at-grade structures. A green roof, smart irrigation system, Silva cells and planting soil, porous paving and high-reflective concrete paving, earthworks and plantings will be installed.

Faculty of Dentistry

1. Research Lab Renovation

NASM: 3,800 Researchers: 65

95 labs will be renovated into 21 labs, located on the 4th and 5th floors of the Dentistry Building. The overall renovation will provide large, open-plan labs, shared support rooms, faculty offices, dedicated trainee space as well as shared multi-user collaboration space. The building systems will be upgraded with new energy-efficient ones and energy-efficient equipment.

Faculty of Applied Science & Engineering

1. UTIAS Lab Renovation

NASM: 351 Researchers: 26

The UTIAS project at 4925 Dufferin Street will update the current Field Robotics Lab and expand and renovate the Sustainable Aviation Design Lab.

2. Civil Engineering and Electrical & Computer Engineering Lab Renovations

NASM: 3,944 Researchers: 178

44 labs will be renovated in Galbraith, Sandford Fleming and the Engineering Annex. These renovations will bring the research lab space up to current standards, including the much needed environmental controls (temperature and humidity) needed to support sensitive research equipment. Many of the spaces will also be opened up to create more collaborative facilities that will support a higher number of grad student researchers.

3. Mechanical and Industrial Engineering Lab Renovations (Lassonde &Haultain)

NASM: 221 Researchers: 16

5 labs will be renovated in Lassonde Mining and Haultain. These renovations will revitalize the research labs and bring their capabilities up to our standard labs, providing clean, modern, and well-serviced facilities for thermal & fluid sciences and energy & environmental engineering research.

4. Mechanical and Industrial Engineering Lab Renovations (Mechanical Engineering Bldg)

NASM: 157 Researchers: 5

6 labs will be renovated in the Mechanical Engineering Building. The proposed renovations include complete renewal of the research labs, the replacement of 6 existing fumehoods, the addition of 2 new fumehoods, and the installation of new HVAC systems.

5. IBBME Lab Renovation

NASM: 629 Researchers: 17

10 labs will be renovated in the Rosebrugh Building for the Institute of Biomaterials & Biomedical Engineering. The proposed renovations include opening up the research environment to create a more collaborative work space, the replacement of fumehoods, the provision of emergency power, and the installation of new mechanical and electrical services.

6. Chemical Engineering & Applied Chemistry Lab Renovations

NASM: 893 Researchers: 94

10 labs will be renovated in the Wallberg and Pratt buildings, and the infrastructure in both buildings will be upgraded. The proposed renovations include new fumehoods, new lab furniture, window replacement, and the replacement and modification of the mechanical and electrical services.

Faculty of Medicine

1. Research & Teaching Lab Renovation

NASM: 12,243 Researchers: 272

The Medical Sciences Renewal Project includes 3 separate areas of the building; the research floors, the Anatomy teaching and support facilities, and the NMR facility. The research lab renovations are planned for lab and lab support rooms on floors 3 to 7 in MSB, with the exception of the 4th floor of the west wing (Block B), which will serve as temporary lab spaces for the remaining occupants during the renovations. 389 research and teaching labs will be renovated to current standards with upgraded infrastructure and centralized facilities. A new structural slab, emergency power and stair will be provided for the NMR facility.

Faculty of Music

1. Electro-Acoustic Music Studio Renovation

NASM: 122 Researchers: 6

The Electro-Acoustic Music Studio at Edward Johnson Building will be renovated to improve air quality, extend performing space and provide adequate acoustical separation.

The following components are on the UTM and UTSC campuses and as such the governance approval path different. These items will be considered by the respective Campus Councils before proceeding to the Executive Committee..

UTM

1. Davis Building Research Lab and Infrastructure Upgrades

NASM: 6,859 Researchers: 95

Six inter-dependent elements are planned in the Davis Building: Back-up Power, A-wing HVAC Renewal, a Retrofit of Electrical Power System, renovations of 1st Floor D Block BIO & FISH research labs, and the 3rd Floor A Block Research Labs. A total of 63 labs will be renewed.

UTSC

1. Campus Vivarium & S-Wing Research Labs Renovation and Growth

NASM: 2,030 Researchers: 38

20 research labs and 11 teaching labs that will be fully renovated. The Campus Vivarium will be undergo renovation and growth to remedy serious compliance and space recommendations. Infrastructure will be upgraded to support existing and planned levels of research, improve efficiency and reduce environmental impact.

NEXT STEPS

Achieving successful completion within the time frame allowed will require projects to be grouped and executed in an efficient manner. Generally, this will mean that multiple initiatives in any given building will be bundled together as a “project” for the purposes of both design and construction.

To expedite the design/documentation process, architects will be single sourced. A list of firms of appropriate size and experience will be assembled with a view to matching firm experience with each project. One firm for each project will be provided with as complete project brief/scope of services as possible and asked to submit a fee proposal. The fee proposal will be reviewed to determine consistency with industry standards.

This single sourcing process will be pursued in a manner consistent with the regulations governing the contracting of licensed professionals.

The bundled, building-based initiatives will be documented and tendered as one project, which should result in economies of scale for contractors. The number of current pre-qualified contractors is sufficient to include five bidders for each project; economies can be achieved through proximity of projects within a building which requires less fixed overhead (job boxes, supervision, scheduling, etc.) and facilitates redirection of labour with less down time.

Phasing of projects within the ‘group’ will not be possible. Consequently, all spaces within the defined project construction must be emptied, de-commissioned and available for construction no later than the date of tender close. This allows the contractor to mobilize quickly and complete the work efficiently.

Billing and administering of separate component parts will reflect the program’s reporting requirements but will otherwise not be allowable.

FINANCIAL IMPLICATIONS

Discussion of overall costs can be found in the *in camera* document for this project.
The funding sources are as follows:

Strategic Investment Fund

Faculty of Arts & Science
Dalla Lana School of Public Health
Daniels Faculty of Architecture, Landscape, and Design
Faculty of Dentistry*
Faculty of Applied Science & Engineering
Faculty of Medicine
Faculty of Music

UTM (*different governance path*)

UTSC (*different governance path*)

The Province of Ontario's Facilities Renewal Program requires expenditure of deferred maintenance funds for this project. These will be allocated within the sub-projects.

* The Faculty of Dentistry may seek borrowing for a portion of their component cost.

RECOMMENDATION:

Be It Recommended to the Academic Board:

1. THAT the Lab Innovation for Toronto (LIFT) Project submitted to the Federal Government's Strategic Investment Fund (SIF) is a priority for the University of Toronto and the institution will provide all required administrative support for the completion of the project by April 30, 2018.
2. THAT the Lab Innovation for Toronto (LIFT) Project – St. George Campus Components, totalling approximately 54,300 NASM (net assignable square metres), to be funded from the following sources:

Strategic Investment Fund

Faculty of Arts & Science

Dalla Lana School of Public Health

Daniels Faculty of Architecture, Landscape, and Design

Faculty of Dentistry*

Faculty of Applied Science & Engineering

Faculty of Medicine

Faculty of Music

be approved.