UNIVERSITY OF TORONTO

OFFICE OF THE GOVERNING COUNCIL

FOR APPROVAL **PUBLIC** **OPEN SESSION**

TO: Academic Board

SPONSOR: Professor Scott Mabury, Vice President, University Operations
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PRESENTER: See Sponsor
CONTACT INFO:

DATE: March 6, 2018 for March 15, 2018

AGENDA ITEM: **6**

ITEM IDENTIFICATION:

Capital Project: Transforming the Instructional Landscape - 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*, "Capital projects over $5 million and up to $20 million will be considered by the Planning and Budget Committee for projects at the St. George campus …and recommended to the Academic Board for consideration. It is expected that such projects will be placed on the Board's consent agenda and be confirmed by the Executive Committee of the Governing Council. Execution of such projects is approved by the Business Board.."

GOVERNANCE PATH

A. Project Planning Report: Project Planning Report, Total Project Cost, and Sources of Funding

1. Planning and Budget Committee [for recommendation] (February 28, 2018)
2. **Academic Board [for approval] (March 15, 2018)**
3. Executive Committee [for confirmation] (March 27, 2018)

B. Execution of the Project

1. Business Board [for approval] (March 21, 2018)

PREVIOUS ACTION TAKEN:

On January 26, 2018, the CaPS Executive Committee approved the request for the expenditure of funds to engage consultants and to proceed with the first phase of construction.

HIGHLIGHTS

- The Transforming the Instructional Landscape project will upgrade 174 classrooms in 23 buildings across the St George Campus, totaling an area of 15,700 NASM. A project of this scope will impact almost 6000 courses, and has the potential to affect the experience of almost every student and instructor on Campus.
- This initiative will involve direct engagement with user groups including divisions, faculty, and students.
- In connection with this initiative, ACE has launched a project with the Innovation Hub at Student Life in order to better understand students needs in the classroom.
- An HVAC Feasibility Review will assess the adequacy of existing HVAC systems and propose design strategies for improvement, upgrade, or replacement.

With quality teaching as one of the University's core missions, instructional space plays an essential role in fulfilling that mandate. As a steward of these important facilities, Academic + Campus Events (ACE) is committed to developing accessible, innovative, and effective purpose built classrooms that address the needs of all stakeholders.

With the changing demographic of our students and instructors coupled with emerging teaching pedagogies and technology, the University must provide options within our teaching inventory. Our traditional approach to the allocation of instructional space has evolved to facilitate the more diverse and complex needs of a variety of teaching programs offered and planned by the University. Our inventory of spaces must match those needs. In numerous conversations with units focused on the delivery of continuing and professional education as well as many emerging teaching leaders within traditional undergraduate and graduate education, there has been a recurring theme surrounding a mismatch between the learner needs and the available inventory.

Differentiation will be key as we move forward. A variety of different teaching spaces actively paired with instructional needs will not only reward the instructors' efforts but also underscore the university's support of the teaching community's efforts to incorporate emerging and novel approaches to pedagogy.

Direct engagement with students and instructors is a fundamental component of this project, and is driving this initiative's roll out. ACE's Classroom Design Group has connected directly with instructors teaching in the classroom, as well as with the Innovation Hub at Student Life, in order to better understand students' needs in the classroom. ACE is working with divisions to identify specific focus groups to help clarify the elements critical to faculty. Feedback will inform the design process, and ensure the project directly responds to user needs across Campus. In this way, this project will not only support the needs in the classroom, but the broader Campus community as a whole through intelligent and responsive design practices.

Expanding: The minimum classroom technology standard created a foundational expectation that has now extended to all teaching spaces. The new 'Teaching Dock' unit will bring the infrastructure of a standard 'Teaching Station Junior' to smaller classrooms and seminar rooms. Eight pilot rooms were installed in summer 2017, with direct feedback to inform the next set. (Classrooms upgraded during the previous two summers: 11)

Enhancing: Recent student outreach has identified power as a fundamental element that would improve the experience in the classroom, enabling students to work more effectively, and stay connected throughout the day as they move around Campus. This summer's renovations added power to 1,594 seats across the campus. (Classrooms upgraded during the previous two summers: 44).

Emerging: ACE's Classroom Design Group have installed a number of different room typologies across campus in order to address emerging pedagogical styles. New spaces will be uniquely purpose built; evolving instructional requirements and learner behaviours will be addressed as a greater understanding of new delivery models is developed. We are piloting a reduced cost Technology Enhanced Active Learning (TEAL) classroom in the McLennan Physical Laboratories' Room 118. Students sit in groups of up to six at collaborative tables, and work together using wireless presentation technologies. (Classrooms upgraded during the previous two summers: 4)

ACE has collaborated with Facilities & Services and Capital Projects to leverage many environmental and operational aspects such as ventilation and access control to create the most optimal conditions for instruction. As in all retrofit projects, accessibility has also been worked in to each project where and as possible, and in keeping with the University's enhanced AODA standards. In addition, instructional spaces will see retrofits in accordance with deferred maintenance plans, and will benefit from comprehensive audiovisual technology updates.

Upgrades and retrofits have occurred annually, with 62 rooms (seating capacity total: 5229) undergoing transformations between 2014 and 2017 inclusive. While several individual projects have already been initiated over the past two years based on an original plan for an 8-year roll out, experience over the last 4-5 years, coupled with the feedback and strong support received from the Divisional Advisory Committee has resulted in an expedited timeframe (8 years to a total of 5 years). Our experience with the Lab Innovation for Toronto (LIFT) Project, with its tight timeframes and multiple simultaneous projects, has led us to conclude that, in order to meet our expedited timeframe, and to benefit from efficiencies of scale and centralized oversight, the various projects across campus are now being considered as one large project and, as such, are being brought forward through governance for recommendation, endorsement and approval.

FINANCIAL IMPLICATIONS

Discussion of overall costs and funding sources can be found in the *in camera* documentation for these projects.

RECOMMENDATION:

Be It Resolved:

THAT subject to confirmation by Executive Committee,

THAT the Report of the Project Planning Committee for the Transforming the Instructional Landscape Initiative, dated February 2018, be approved in principle; and

THAT the Transforming the Instructional Landscape Initiative be funded from University of Toronto Operating Funds, be approved.

DOCUMENTATION PROVIDED:

1. Report of the Project Planning Committee for the Transforming the Instructional Landscape Initiative, dated February 2018.

UNIVERSITY OF TORONTO
ACADEMIC + CAMPUS EVENTS AND FACILITIES & SERVICES
February 2018

Transforming the Instructional Landscape

I. Project Background

a) Background Information

With quality teaching as one of the University's core missions, instructional space plays an essential role in fulfilling that mandate. As a steward of these important facilities, Academic + Campus Events (ACE) is committed to developing accessible, innovative, and effective purpose built classrooms that address the needs of all stakeholders.

Over the last number of years, ACE has been proactive in the support of teaching through the development of minimum technology standards and classroom renewal initiatives. These have established a two-pronged foundation on which the use of technology for instruction is broadly available in a consistent and fully supported framework, and a systematic addressing of the backlog of deferred maintenance in classrooms.

While these initiatives have gone a long way to support and renew teaching and instruction at the University, the focus is about maintaining the status quo and minimum standards. In numerous conversations with units focused on the delivery of continuing and professional education, as well as many emerging teaching leaders within traditional undergraduate and graduate education, there has been a recurring theme surrounding a mismatch between the learner needs and the available inventory. One of the impacts of this is that many units are addressing this shortfall locally, and not leveraging the efficiencies and economies of scale or support framework that ACE can provide.

> "At the Munk School, we are very concerned that there are simply not enough classrooms at the university that meet today's standards for interaction, group discussion and availability of technology. Students complain constantly about bad classroom experiences. It is one of our greatest pedagogical challenges."

With the changing demographic of our students and instructors, coupled with emerging teaching pedagogies and technology, we need to provide choice and options within our teaching inventory. Our traditional approach to allocation of instructional space is morphing to facilitate the more diverse and complex needs of a variety of teaching programs that the University is offering. This needs to be supported by an inventory of spaces that can match those distinct needs.

From a Facilities and Services perspective, many of the vital components leading to a positive experience are not readily apparent. Beyond the individual experience level, it is important that these spaces are sustainable saving GHG by minimizing energy use. This project will also be a clear demonstration of University Operations' commitment to operational sustainability. Upgraded HVAC equipment and controls complete with automated occupant controlled high efficiency LED lighting will be standard features of these new room and lecture halls. Additionally, access control of these spaces is important to maximize flexibility and minimize staffing time and expenses that currently are used to physically lock and unlock these spaces.

These are the elements of the classroom retrofit project that Facilities and Services are responsible for and will be addressing throughout this project in establishing classrooms and learning spaces for the future in order to enhance learning outcomes and experience for the campus community.

The Transforming the Instructional Landscape project will upgrade 174 classrooms in 23 buildings across the St George Campus, totaling an area of 15,700 NASM. A project of this scope will impact almost 6000 courses, and has the potential to affect the experience of almost every student and instructor on Campus.

b) Existing Space

Existing space

The University of Toronto currently has a wide spectrum of instructional spaces across the St George Campus in both heritage and non heritage buildings. In partnership with Facilities & Services, Academic & Campus Events has identified a wide range of spaces across Campus that are in need of a comprehensive renovation. These rooms have been selected as they require a variety of upgrades, including new audiovisual technology, furniture, finishes, acoustic treatment, and potential upgrades to the HVAC, lighting, and security systems. This project will also include a significant amount of asbestos abatement across the St George Campus.

Occupant profile

Given the array of classrooms selected for these upgrades, the Transforming the Instructional Landscape (TIL) project will improve instructional facilities for multiple Departments, Faculty, and students across the St George Campus. Rooms that will be upgraded include both large and small lecture auditoriums with fixed furniture, seminar spaces of a variety of capacities with loose furniture, and new and emerging instructional environments with diverse furniture types. This variety of spaces ensures instructors employing multiple delivery methods and pedagogies will benefit from an improved instructional environment.

II. Project Description

a) Statement of Academic Plan

As the student and faculty demographics continue to change and evolve, new technology and emerging teaching pedagogies are also shifting the instructional landscape. The University must respond by providing a greater range of options within our teaching inventory. The traditional method of space allocation has now evolved to recognise and support this diverse and complex range of program offerings delivered by the University. Because of this new system, the University can now expand the range of spaces to within the inventory to match those needs.

Differentiation will be key as we move forward. A variety of different teaching spaces actively paired with instructional needs will not only reward the instructors' efforts but also underscore the university's support of the teaching community's efforts to incorporate emerging and novel approaches to pedagogy.

Direct engagement with students and instructors is a fundamental component of this project, and is driving this initiative's roll out. ACE's Classroom Design Group has connected directly with instructors teaching in the classroom, as well as with the Innovation Hub at Student Life, in order to better understand students' needs in the classroom. ACE is working with divisions to identify specific focus groups to help clarify the elements critical to faculty. Feedback will inform the design process, and ensure the project directly responds to user needs across Campus. In this way, this project will not only support the needs in the classroom, but the broader Campus community as a whole through intelligent and responsive design practices.

b) Space Requirements, Program and Functional Plan

Space Requirements

N/A

Space Program

Expanding: The minimum classroom technology standard created a foundational expectation that has now extended to all teaching spaces. The new 'Teaching Dock' unit will bring the infrastructure of a standard 'Teaching Station Junior' to smaller classrooms and seminar rooms. Eight pilot rooms were installed in summer 2017, with direct feedback to inform the next set. (Classrooms upgraded during the previous two summers: 11)

Enhancing: Recent student outreach has identified power as a fundamental element that would improve the experience in the classroom, enabling students to work more effectively, and stay connected throughout the day as they move around Campus. This summer's renovations added power to 1,594 seats across the campus. (Classrooms upgraded during the previous two summers: 44).

Emerging: ACE's Classroom Design Group have installed a number of different room typologies across campus in order to address emerging pedagogical styles. New spaces will be uniquely purpose built; evolving instructional requirements and learner behaviours will be addressed as a greater understanding of new delivery models is developed. We are piloting a reduced cost Technology Enhanced Active Learning (TEAL) classroom in the McLennan Physical Laboratories' Room 118. Students sit in groups of up to six at collaborative tables, and work together using wireless presentation technologies. (Classrooms upgraded during the previous two summers: 4)

ACE has collaborated with Facilities & Services and Capital Projects to leverage many environmental and operational aspects such as ventilation and access control to create the most optimal conditions for instruction. As in all retrofit projects, accessibility has also been worked in to each project where and as possible, and in keeping with the University's enhanced AODA standards. In addition, instructional spaces will see retrofits in accordance with deferred maintenance plans, and will benefit from comprehensive audiovisual technology updates.

Upgrades and retrofits have occurred annually, with 62 rooms (seating capacity total: 5229) undergoing transformations between 2014 and 2017 inclusive. While several individual projects have already been initiated over the past two years based on an original plan for an 8-year roll out, experience over the last 4-5 years, coupled with the feedback and strong support received from the Divisional Advisory Committee has resulted in an expedited timeframe (8 years to a total of 5 years). Our experience with the Lab Innovation for Toronto (LIFT) Project, with its tight timeframes and multiple simultaneous projects, has led us to conclude that, in order to meet our expedited timeframe, and to benefit from efficiencies of scale and centralized oversight, the various projects across campus are now being considered as one large project and, as such, are being brought forward through governance for recommendation, endorsement and approval.

c) Building Considerations

Building characteristics and massing

This project is primarily limited in scope to existing instructional spaces, with the exception of any work that may be required to upgrade building systems. Special attention will be paid to preserving the unique character and qualities of the twenty-three buildings within which the project spaces are located. Furniture and finishes will be selected to complement the overall building palette.

Sustainability design and energy conservation

Included in the Transforming the Instructional Landscape project is a review of the existing heating, ventilation, and cooling system to bring these up to current performance and energy standards.

Accessibility

> "The University's buildings, landscape and grounds must accommodate a diverse population in an open and inclusive campus. The campus environment should adhere to the principles of universal design with all new construction on campus."
>
> 2011 St George Campus Master Plan

The University is committed to creating a community of inclusion and accessibility to all students, in order to fulfill this goal, the TIL project includes a full review of accessibility compliance, including AODA requirements relating to access doors, seating, lifts, and specialised finishes on stairs and flooring.

Signage, donor recognition

N/A

Mechanical/ Electrical and Data

Facilities & Services will be upgrading building systems as required, in order to ensure quality instructional environments are maintained across the St George Campus. The Phase 1 Feasibility Review will include:

HVAC

- Assessment of the adequacy of existing HVAC systems
- Design proposals to address existing known issues with space HVAC systems
- Design proposals for inclusion of CO2 sensors, and CO2/temperature sensors
- Design for occupancy sensors and integration into existing HVAC systems

Electrical Distibution

- Consultants will verify the load and existing panel capacity to ensure the additional proposed load required can be accommodated.

d) Site Considerations

Site context

The project scope is limited to existing interior environments, and work will be scheduled so as to not disrupt planned Campus activities scheduled in adjacent areas.

Zoning regulations

N/A

Heritage status

N/A

e) Campus Infrastructure Considerations

Utilities (electrical capacity, water, gas, steam lines)

Consultants will review existing systems for current capacity and proposed increased load requirements, as required. The upgrades requiring HVAC (ventilation), lighting, additional AV equipment and electrical power at the seats will require analysis of current electrical load profiles and possibly upgrades to Building Service and Distribution.

The thermal comfort upgrades might include heating, cooling and ventilation. Each of these will require understanding of current airflow characteristics to assess the ability to accommodate the expected density of people. Additional site/room equipment will also require identification to identify heat loads currently and futuristically.

Overall, the utility service to the building will require analysis to ensure capacity is available throughout the established profiles. This will include electrical, water, steam lines, thermal hot water and natural gas, as required. Emergency electrical provisions initially for Life Safety and Fire Safety Systems also required.

Sewer and storm water management

N/A

f) Secondary Effects

- Minor interior demolition
- Staging requirements
- Reallocation of vacated space

g) Schedule

A phased schedule has been developed in order to sufficiently accommodate program delivery needs across campus, while taking multiple rooms out of service for renovation work.

The proposed schedule is as follows:

TRANSFORMING THE INSTRUCTIONAL LANDSCAPE		
PROPOSED PROJECT SCHEDULE - ACE SCOPE		
2018		
MAY - AUGUST	32 CLASSROOMS	8 BUILDINGS
AUGUST - DECEMBER	12 CLASSROOMS	3 BUILDINGS
2019		
JANUARY- APRIL	13 CLASSROOMS	4 BUILDINGS
MAY - AUGUST	29 CLASSROOMS	7 BUILDINGS
AUGUST - DECEMBER	17 CLASSROOMS	2 BUILDINGS
2020		
JANUARY- APRIL	11 CLASSROOMS	2 BUILDINGS
MAY - AUGUST	16 CLASSROOMS	6 BULIDINGS
AUGUST - DECEMBER	21 CLASSROOMS	2 BUILDINGS
2021		
JANUARY- APRIL	23 CLASSROOMS	4 BUILDINGS
PROJECT TOTAL	174 CLASSROOMS	23 BUILDINGS

APPENDICES:

1. ACE Classroom Consultation Process
2. ACE Detailed Scope (on request)
3. Total Project Cost Estimate (on request to limited distribution)

APPENDIX 1:

ACE Classroom Consultation

While developing classroom designs for upgrades, ACE has consulted with divisions and faculty in multiple ways. We consult with divisions who might be prime users of a room that is slated for upgrades, with specific divisions pursuing changes in pedagogy such as OISE, the Faculties of Information, Forestry and Engineering, with faculty and instructors, either individually or collectively, who are looking to enhance classrooms to develop their pedagogy, and with specific stakeholders such as students, divisional operational groups, and central divisions like the Property Management Group and Accessibility Services.

In developing our furniture RFPs for both fixed and loose furniture, we gathered input from students, professors, divisional planning groups (Arts & Science and Engineering), the Property Management Group, and Caretaking. This included having users test and grade samples of each vendor proposal.

Where there are identifiable users who might be affected by scheduled upgrades, we approach CAOs, Registrars, or other divisional contacts to either survey or gather a group of instructors to ensure we continue to meet any current requirements, we add future potential, and do not remove any needed functionality.

For one example, we contacted the CAO at Chemistry and the CAO and the undergraduate Chair at Physics to survey professors to consult about pedagogy and presentation requirements. Most importantly, allowing us to convert the fixed lab bench to something that is accessible, but also gaining their input for all aspects of the classrooms. Following the consultations, we developed a solution which divided the functions of the benches, creating a height adjustable demonstration table and separate pedestals that contained utilities like water, gas and electricity. In addition to determining the demonstration bench requirements we collected valuable input through the consultation to define classroom furniture, AV, and teaching space requirements. We learned professors required dual projection, whiteboard writing surfaces, additional chalkboards, and what style of furniture was best suited to the pedagogy. The departments provided input for the colour palette, and we even added drawings of molecules and periodic tables in the classrooms in Lash Miller.

In other cases, we survey the instructors in specific classrooms, i.e. BA 2195 or AB 107, to determine specific needs are met in the refresh. In these cases, we learned about moveable furniture requirements and the percentage of professors and instructors who would prefer whiteboards in a classroom, guiding our choices. In Mechanical Engineering we consulted with the operations manager, instructors and the APSC Operations group to determine suitable furniture for the students and equipment for the instructors. Here there was a case of a professor who missed reporting a function, but we were able to update after the fact to include her requirement.

We worked with professors from the Arts & Science Teaching Committee, gathering their valuable input and applying it to upgrades. This included moveable furniture where possible, simple changes to fixed furniture to allow for collaboration, modifying the lighting in classrooms for a variety of teaching and presentation styles, and even colour choices and how they affected students.

In the iSchool, we met with the CAO, Dean, and Registrar to update several rooms to match their change in cohort size while including new furniture and updated AV to match shifting pedagogy. The Faculty of Forestry also changed their enrolment cohort and pedagogy and we moved up the timing of a room refresh to meet their timing and we consulted with them to refresh a classroom to meet their new requirements, adding collaborative furniture, distributed whiteboard surfaces, lighting, and new AV.

We also consult with Accessibility Services to ensure we can meet a broad range of accommodation needs with the regular classroom furniture to reduce the amount of specific furniture that requires delivery; we consult with operational groups in buildings to ensure we match their colour palette, such as the Planning and Infrastructure Group at Arts & Science, and operation groups in Engineering and OISE; we consult with Property Management not only for renovations but also to determine equipment, flooring, and finishes that meet their needs in durability and functionality, and work with them to amalgamate energy saving functions into ventilation and lighting.

With the launch of the criteria-based room allocation, ACE has initiated a direct email communication with faculty and departmental stakeholders which has allowed the office to share information about planned and recent upgrades to relevant instructional environments. These upgrades have included new furniture, new floor finishes, new lighting infrastructure and controls, writing surfaces, and new audiovisual technology. Professors are encouraged to provide comments and feedback based on their experiences in the classroom.

Term	**Number of Classrooms Renovated**	**Number of Stakeholders Contacted**	**Number of Responses**
Summer 2017	32	233	64
Fall 2017	10	122	11
Total	**42**	**355**	**75**

Teaching Dock Pilot Project 2017/2018

ACE has launched an initiative to provide permanent audiovisual technology in instructional spaces of all sizes. The Teaching Dock Pilot Project was initiated to bring infrastructure to rooms with a capacity of 36 and below. This new AV system has the same functionality as a Teaching Station Junior, but has been streamlined and designed for use in smaller spaces. Outreach is ongoing to gain user feedback and inform the design process.

Throughout the Summer and Fall term, ACE has contacted professors teaching in Pilot classrooms, and has shared labelled diagrams and instructions to illustrate the various components of the Teaching Dock unit.

Term	Number of Classrooms Renovated	Number of Stakeholders Contacted	Number of Responses
Summer 2017	10	46	8
Fall 2017	11	122	11
Total	**21**	**168**	**19**

Feedback Received

A number of faculty responded to ACE's outreach. Feedback included:

- Inquiries with regards to user interface; these questions prompted further broad communication to better support user interaction.
- Comments and recommendations with regards to overall proposed project design; subsequent plans were amended to suit the expressed needs with regards to furniture selections, writing surfaces, and audiovisual equipment.
- *"Thank you. I am very grateful for having been given the opportunity to give feedback."*
- *"These proposed changes look amazing. I am sure our faculty and students will love the upgrade to the classrooms. Thanks for all your hard work on this."*

TIL Project Awareness and Outreach

In order to generate broad awareness and determine best consult mechanism, ACE has presented or met with the following stakeholders groups:

Academic Leadership Forum

FAS Vice Dean Teaching & Learning

FAS Teaching & Learning Initiatives Committee

FAS Vice Dean

OISE Associate Dean Programs

MED Vice Dean MD Program

MED Vice Dean Graduate & Academic Affairs

MED Graduate & Life Sciences Education Committee

FASE Vice Dean Undergraduate

FASE Vice Dean First Year Engineering

NUR CAO & IT

Requested meeting with:

FAS CPAD

FAS Science Chairs