



APPENDIX "E" TO REPORT NUMBER 183  
OF THE ACADEMIC BOARD – February 7,  
2013

**TO:** Planning and Budget Committee

**SPONSOR:** Gail Milgrom, Director, Campus and Facilities Planning

**CONTACT INFORMATION:** 416-978-5515

**DATE:** December 11, 2012 for January 16, 2013

**AGENDA ITEM: 6**

**ITEM IDENTIFICATION:**

Report of the Project Planning Committee for the Renovation of Physics Undergraduate Teaching Laboratories at the University of Toronto Mississauga

**JURISDICTIONAL INFORMATION:**

Capital projects over \$3 million and up to \$10 million will be considered by the Planning and Budget Committee and recommended to the Academic Board for consideration and approval in principle (i.e. site, space plan, overall cost and sources of funds). 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. If a project will require financing as part of the funding, the project proposal must be considered by the Business Board.

**BACKGROUND:**

UTM's first science laboratories were built almost 40 years ago and in many cases the facilities barely meet current regulatory standards. Although the North Building Reconstruction Phase One and Kaneff Building Expansion, both recently approved, will provide urgently needed office, classroom, and dry laboratory type research academic space, there is no funded plan, at this time, to create significant science expansion, so maximization and modernization of the existing serviced space in the W.G. Davis building for research and teaching laboratories is more important than ever.

In June, 2011, the Ontario government announced capital funding estimated at \$17.5 million for the Renovation of Undergraduate Teaching Laboratories at the University of Toronto Mississauga (UTM) enabling UTM to undertake a multi-year renewal program of its teaching laboratories. A November 2011 Project Planning Report identified a series of proposed renovations of undergraduate laboratories in the W.G. Davis Building that were to take place over the next four years during the summer semester construction window.

The renovation proposed is essential to maximize the utilization of the existing infrastructure and will support increased numbers of undergraduate, research-based master's and doctoral graduate programs, and provide the updated infrastructure needed to support today's scientific teaching and research.

### **HIGHLIGHTS:**

The proposed project will renovate the area known as Spigel Hall recently vacated by Food and Retail operation. This proposal will allow accommodation of Physics teaching laboratories in an airy windowed area that can support its requirements, and it will free highly serviced space in the D-block of the W.G. Davis building for expansion of wet research laboratories for Biology and CPS. This project is Phase 6 of the multi phased plan approved in 2011 and it will take place in the summer of 2013.

The Physics department is currently engaged in an academic and strategic planning process to support enrollment growth and expansion of lab-based courses. The quality and practicality of the physics education will be significantly improved by using modern laboratory layout to accommodate advances in new physics pedagogy and the development of studio courses that incorporate the blending of lectures and experiments to encourage collaborative work and critical thinking.

With this project the physics undergraduate teaching laboratories will be relocated and renovated to purpose-built space able to accommodate large numbers of students. Nevertheless, these students will be working in small groups, using modern equipment and data acquisition tools to experience the practical applications of the theoretical physics concepts taught in lectures. Separate spaces will be devoted to first year physics versus upper year courses, yet both will be configured in the form of learning "studios" in which students explore for themselves the various demonstrations, in conformity with current best practices in physics pedagogy. Additional specialized spaces providing light and/or sound isolation have been allocated for certain specialized experiments and demonstrations. Technical staff will be provided with office and preparatory space, as well as storage space for equipment.

Importantly, the laboratory design also provides maximum flexibility so that it can accommodate other, non-Physics users who may require laboratory space that is not heavily serviced. A number of discussions are currently underway, within the context of longer-range academic planning that could result in additional and different programs being located at UTM that would require such laboratory space.

Critical to the payback of the Physics lab replacement is the secondary impact of the chosen location. Rather than re-build in the current location, the heavily serviced D-Block of the Davis building, the lab is being built in the old Spigel Hall space since it really only requires a lighter level of services; power and water. That results in freeing up critically-needed space in the heavily serviced area that will be re-built for faculty research laboratories. In combination with other moves out of D-Block, research laboratories will be provided for between eight and twelve new science faculty. This complex "decanting" from the D-Block is fundamental to UTM's ability to expand sciences programs and hire additional research faculty. .

**FINANCIAL AND PLANNING IMPLICATIONS:**

The Phase 6, Physics Teaching Laboratory Renovation Project has an estimated total project cost of \$3.1 million dollars.

**PROJECT FUNDING:**

In June 2011, the provincial government announced \$52.5 million in funding for the first phase of the reconstruction of the North Building and to renovate teaching laboratories in the William G. Davis Building. The combined North Building Reconstruction Phase 1 project and Teaching Laboratory Renovations in the Davis Building are to be funded by the province 70% and UTM 30%. However, due to the cash flow from the province and the required timing of the projects involved, the proportion of the funding will vary significantly among the related projects. This project is to be funded from the UTM Operating Fund.

**SCHEDULE:**

The Renovation of the Physics teaching laboratories is to occur in the Spring and the Summer of 2013.

Consultant Selection Approval CaPS Exec	November 2012
Executive Committee of Governing Council	February 15, 2013
Construction	April-August 2013
Occupancy	September 2013

The proposed schedule is based on advanced planning to allow for construction to commence in April, 2013 immediately after classes finish. It is essential for construction to be completed by the end of August 2013.

**RECOMMENDATIONS:**

Be It Recommended to the Academic Board:

- a) THAT the Project Planning Report for the Renovation of Physics Undergraduate Teaching Laboratories in the W.G. Davis Building at the University of Toronto Mississauga, dated December, 2012, be approved.
- b) THAT the project scope for the proposed renovation of the Physics Teaching Laboratories, Phase 6 of a multiphase project, with a total project cost of \$ 3.1 million to be funded from the UTM Operating Fund to be approved in principle.