



SUBJECT	Board 4 Post-Completion Report – Undergraduate Life Sciences Teaching Labs Renewal, UBCV
SUBMITTED TO	Property Committee
MEETING DATE	June 15, 2023
SESSION CLASSIFICATION	Recommended session criteria from Board Meetings Policy: OPEN
REQUEST	For information only - No action requested
LEAD EXECUTIVE	Frank Laezza, Vice-President Finance & Operations
SUPPORTED BY	Gage Averill, Provost and Vice-President Academic, UBC Vancouver Bhushan Gopaluni, Vice-Provost and Associate Vice-President Faculty Planning John Metras, Associate Vice-President Facilities Jennifer Sanguinetti, Managing Director, Infrastructure Development Yale Loh, Treasurer Meigan Aronson, Dean, Faculty of Science

PRIOR SUBMISSIONS

The subject matter of this submission has been considered previously by the Property Committee on the following occasions:

1. [February 15, 2018](#) (OPEN SESSION) – Budget revision, Funding Release \$8,000,000
Action/Follow up: Increase capital budget to \$88,000,000, and consolidate and adjust internal financing to a single internal loan.
2. [June 14, 2016](#) (OPEN SESSION) – Board 3 Approval, Funding Release \$73,000,000
Action/Follow up: Proceed with construction, subject to 80% of tenders being received at or on budget, and approval for internal loans.
3. [September 29, 2015](#) (OPEN SESSION) – Revised Board 2 Approval, no Funding Release
Action/Follow up: Revised funding plan based on revised Provincial contribution, and authorization to proceed with swing space renovations.
4. [December 2, 2014](#) (OPEN SESSION) – Board 2 Approval, Funding Release \$5,500,000
Action/Follow up: Issue Development Permit and proceed to working drawings and tender.
5. [April 14, 2014](#) (OPEN SESSION) – Board 1 Approval, Funding Release \$1,500,000
Action/Follow up: Commence design.

The following Executive Summary provides a status update from the date of the most recent submission.

EXECUTIVE SUMMARY

In accordance with the [Capital Projects Policy](#), this Board 4 post-completion report is provided as part of the project management process for construction projects over \$5,000,000 following the construction, occupancy and warranty period on the Undergraduate Life Sciences Teaching Labs Renewal project. The Board of Governors has delegated to the Property Committee the responsibility receiving Board 4 post-completion reports for construction projects between \$5 million and \$20 million. The aggregate estimated value of the Undergraduate Life Sciences Teaching Labs Renewal project is \$98,200,000.

The Undergraduate Life Sciences Teaching Labs Renewal was a complex project intended to provide modern teaching laboratories and classrooms for undergraduate students and offices for their teaching faculty in the following programs:

- Faculty of Science: Biology, delivered by Botany and Zoology, formerly located in Biological Sciences North Wing and Centre Block
- Faculty of Science: Microbiology & Immunology (M&I), formerly located in the Wesbrook Building
- Faculty of Medicine: Biochemistry & Molecular Biology (B&MB), and Cellular and Physiological Sciences (CAPS), formerly located in D.H. Copp Building

The project renewed the seismically vulnerable Biological Sciences North wing (built 1976) and replaced the deteriorated Biological Sciences Centre Block (built 1948) with a new, five storey Biological Sciences East wing. This completed the renewal of the aging Biological Sciences complex (the two research wings were renewed in 2012). The project was completed for the start of winter session classes in 2019, and the units were generally very pleased with the outcome. One instructor remarked at the time that where previously, their activities were limited by building infrastructure, the only limitation now was the instructor's imagination. The timing of the pandemic in the building's first year of service affected the feedback and deficiency resolution process that is typical of a major capital project, but most deficiencies were identified and resolved prior to return of the students to campus.

While successful in achieving the over-arching goals, the project faced significant budget challenges. These were outlined to the Board of Governors in February, 2018 and the project budget was increased from \$80 million to \$88 million. Through the construction phase of the project, it became apparent that the provincially mandated mechanical and electrical Design-Build contract directly and indirectly impacted the project delivery and budget in ways that had not been anticipated, leading to extensive and expensive change orders and consultant fee increases. The final budget for the project was \$98.2 million, which is \$10.2 million (11.6%) over the Board approved budget. This increase, which includes an estimate for final resolution of a consultant claim dispute, has been reported to the Board of Governors through the bi-annual Capital Project Updates. As reported, the budget overrun was covered by the Retained Risk Fund, fiscal year 2020 mid-year operating fund, BC Hydro grant, Infrastructure Impact Charges for additional Public Realm work, Faculty of Science, Infrastructure Development planning contingency and an internal loan.

Funding Source	Amount \$
Provincial Government	11,838,000
Federal Strategic Infrastructure Fund	32,527,500
BC Hydro	21,710
Central Operating Fund	43,635,000
Capital Operating Fund Internal Loan	5,000,000
ID Capital Planning Contingency	1,500,000
Infrastructure Impact Charges (IIC)	830,000
Retained Risk Fund	2,600,000
Faculty of Science	249,161
Total	98,201,371

A stakeholder meeting of occupants, operators and the project delivery team was held on March 8, 2023 to review project successes, constraints and lessons learned. All occupants agreed that the building is beautiful, bright, and well organized. Instructors are delighted with the exceptional teaching labs that are facilitating program innovation and excellence, students love the new teaching spaces, and the informal learning spaces are in heavy use. Co-location of the life sciences educational faculty is facilitating much greater program interaction and collaboration. Overall, the design process was very positive: units were fully engaged, heard, and accommodated, and spaces turned out largely as envisioned.

There were, however, a number of project delivery issues which mostly stemmed from the mandated Design-Build contractual arrangement. For the occupants, the most significant impact was ever-shifting completion delays which led to an extremely compressed move-in and teaching lab setup period in a building that still had many deficiencies. Other issues included gaps in accountability, coordination, and communication, installation of a very problematic mechanical system, and the previously noted budget overruns.

The project issues noted above led to a granular analysis of the project and there have been subsequent improvements to overall project development and management processes, as well as some internal re-structuring and changes to specific components in UBC's Technical Guidelines.

UBC has also provided Capital Asset Management colleagues in the Ministry of Post-Secondary Education and Future Skills with a Lessons Learned analysis which recommends that neither full nor partial Design-Build be considered a viable project delivery approach for complex academic projects.

SUPPLEMENTAL MATERIALS (optional reading for Governors)

1. Images of final project

Supplemental Materials 1 – Images of Final Project

Exterior views of final project



Interior views of large lecture theatre



Interior views of various flat floor classrooms



Interior views of laboratory spaces



Interior views of interior spaces

