

<b>SUBJECT</b>	<b>ENGINEERING STUDENT CENTRE   BOARD 4 REPORT</b>
<b>MEETING DATE</b>	<b>SEPTEMBER 21, 2017</b>

Forwarded to the Board of Governors on the Recommendation of the President

**APPROVED FOR  
SUBMISSION**




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Santa J. Ono, President and Vice-Chancellor

	<b>For Information</b>
<b>Report Date</b>	August 21, 2017

**Presented By** Louise Cowin, Vice-President Students  
 Andrew Szeri, Provost & Vice-President Academic  
 Andrew Simpson, Vice-President Finance & Operations  
 James Olson, Interim Dean, Faculty of Applied Science  
 John Metras, Managing Director, Infrastructure Development  
 Michael White, Associate Vice-President Campus & Community Planning  
 Peter Smailes, Treasurer  
 Aubrey Kelly, President and CEO, UBC Properties Trust

**EXECUTIVE SUMMARY**

Winner of the 2017 Wood Design Award, Institutional Wood Design category, the Engineering Student Centre (ESC) is a hub for undergraduate engineering students and facilitates the advancement of the Engineering Undergraduate Society (EUS) mission. The 953 square metre multi-purpose facility was constructed in the courtyard bounded by the CEME Building, Fred Kaiser Building and the MacLeod Building, and it replaced the “Cheeze Factory,” formerly located on that site.

The UBC Engineering Student Centre (ESC) achieved LEED Gold certification. Finishing at \$5,799,858 (\$579,858 over the Board-approved budget of \$5,220,000), occupancy was delayed by four months due to supplier delays, extended roofing complications due to moisture and wood staining.

The EUS has expressed its satisfaction with the facility. From *The Ubyyssey* September 27, 2015:

“New Cheeze finally opens”

Both Alan Ehrenholz, (former EUS president) and Scott Pidzarko (former EUS VP Administration) agreed that the ESC space does a good job of representing engineering student life. “I think the big part of engineering is work hard and play hard. This space offers the opportunity for students to study in quiet and safe environment as well as be social and have fun,” said Pidzarko.

From Katherine Westerlund, VP Administration, EUS: “The ESC has done an excellent job reflecting the “work hard, play hard” mentality of an engineering student. Students study in the building well into the night during the week, and social events within the building are frequent. With a student-run cafe in the building, it allows people to volunteer with our society and supplies the students with caffeine during those long study hours. Overall, having a student-run space on campus has been great for student life, academics, and fostering a sense of belonging within our faculty.”

<p><i>If this item was previously presented to the Board, please provide a brief description of any major changes since that time.</i></p>	<p>As part of the Board Approved project management process, Board 4 is the project close-out report which is submitted following construction, occupancy and warranty period.</p>
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**INSTITUTIONAL STRATEGIC PRIORITIES SUPPORTED**

- Learning     
  Research     
  Innovation     
  Engagement  
 (Internal / External)     
  International  
 or  Operational

**DESCRIPTION & RATIONALE**

The Engineering Student Centre (ESC) is a hub for undergraduate engineering students and facilitates the advancement of the Engineering Undergraduate Society (EUS) mission. The 953 square metre (10,261 square foot) multi-purpose facility was constructed in the courtyard bounded by the CEME Building, Fred Kaiser Building and the MacLeod Building, and replaced the “Cheeze Factory”, formerly located on that site.

The ESC provides study and group learning spaces and computer lab facilities open to engineering undergraduate students of all disciplines. It provides the hub for EUS members to interact with students from other engineering disciplines and related programs through the use of common facilities, programs, and opportunities. This enhancement of inter-disciplinary interaction expands peer networks and promotes team-building and problem-solving, key elements of the engineering undergraduate curriculum. The ESC is used as a venue for professional development events with alumni, industry representatives and engineering associations, serving to build valuable connections between current students, practicing engineers and future employers. The multi-purpose concept of the ESC permits its use for engineering undergraduate social events throughout the academic year. The facility has been programmed to suit the needs of students for many years to come.

**BENEFITS**

See Description & Rationale and Consultation sections.  
 Learning,  
 Research,  
 Financial,  
 Sustainability &  
 Reputational

**RISKS**

Project is complete.  
 Financial,  
 Operational &  
 Reputational

**COSTS**

The ESC finished at \$5,799,858, that is, \$579,858 over the Board approved budget of \$5,220,000. The project cost overage was addressed with additional donor funding of \$200,839, Retained Risk funding of \$272,388 and an additional Faculty of Applied Science contribution of \$106,631.

**FINANCIAL**  
Funding Sources,  
Impact on  
Liquidity

Funding sources for ESC capital costs are as follows:

	Board 1	Board 2	Board 3	Board 4
Student Fees (EUS)	2,410,000	2,560,000	2,560,000	2,560,000
Fundraising (APSC)	2,410,000	1,910,000	1,910,000	2,110,839
APSC Contribution		500,000	500,000	606,631
Informal Learning Space Fund	250,000	250,000	250,000	250,000
Retained Risk Fund				272,388
<b>Total</b>	<b>5,070,000</b>	<b>5,220,000</b>	<b>5,220,000</b>	<b>5,799,858</b>

The student contribution of \$2.56 million to the ESC project was made in accordance with a Memorandum of Agreement (Financing Contributions) between UBC and the Alma Mater Society (EUS's parent entity). The MOU was executed and the fee proposal was approved by the Board of Governors in 2009. The contribution from student fees increased from \$2.41 million at Board 1 to \$2.56 million at Board 2 to cover increased project costs and is consistent with the terms of the MOU. An internal loan was provided by UBC Treasury to the Faculty to cover the student contribution of \$2.56 million, less accumulated fees on the date of the loan. This loan will be repaid over a period of up to 25 years at an expected rate of 5.75% per year, with annual debt service sourced from the project specific student fee.

**SCHEDULE**  
Implementation  
Timeline

The schedule was revised to align development with fundraising process. Progress to Board 3 was dependent upon achieving firm commitments for at least \$2,000,000 and solid, identified prospects for the remaining \$410,000. The Faculty of Applied Science guaranteed all the outstanding fundraising, so that the funding commitment required to complete the project was achieved. The project went to Board 3 in November 2013. Construction started in January 2014 and Occupancy was achieved on 24 September 2015.

Delays by the glulam supplier triggered acceleration of roofing installation in October 2014. Although a system of tarps on ponywalls was constructed against the rain, November storms wet the plywood sheathing. Until the moisture content was reduced, roof installation was delayed. Following this, wood surface staining from metal rusting required extensive sanding causing further delays and additional costs. The roof was not watertight until April 2015.

	Board 1	Board 2	Board 3	Board 4
Board of Governors (Board 1)	Nov-10	Nov-10	Nov-10	Nov-10
Board of Governors (Board 2)	Sep-11	Feb-13	Feb-13	Feb-13
Board of Governors (Board 3)	Feb-12	Sep-13	Nov-13	Nov-13
Commence Construction	Mar-12	Oct-13	Jan-14	Jan-14
Substantial Completion	Apr-13	Nov-14	Apr-15	Sep-15
Occupancy	May-13	Dec-14	May-15	Sep-15
Board of Governors (Board 4)	Jun-14	Jan-16	Jun-17	Sep-17

**CONSULTATION**

Relevant Units,  
Internal &  
External  
Constituencies

A stakeholder meeting of occupants, operators and project delivery team was held 9 August 2017 to review project successes, challenges and lessons learned. Minutes of the meeting are available upon request. The following is a summary of the discussion.

**Architect**

The second architect, Urban Arts Architecture, was a good choice. The architect selection committee had initially selected another firm, however, UBC participants found the design process was not satisfactory. The second architect was engaged – an interactive architect who could respond the students' keen desire to be closely involved with the project.

Lesson Learned: For a highly involved student group, the selection of the architect is key to a successful project. Talking to previous clients to determine level and type of interaction is recommended.

**Design**

Winner of the 2017 Wood Design Awards in the category: Institutional Wood Design - Small category: Shelley Craig, Urban Arts Architecture - UBC Engineering Student Centre.

The replacement of the iconic and sentimental favorite Cheeze Factory was necessitated by its complete deterioration. Funding a building is challenging but several UBC groups and donors stepped up to contribute. The resulting ESC is a tremendously successful project for the Engineering Undergraduate Society and the Faculty of Applied Science.

Lesson Learned: The students' design intent was to maximize usable space and minimize "back of house" functions. The lack of custodial space was addressed with the building user and the Facilities Manager, however, the undersized mechanical room will make servicing and access for electrical and mechanical equipment extremely difficult and will be an ongoing challenge.

**Materials**

Nail Laminated Timber (NLT) was used at ESC. Because of early heavy rains, the NLT became wet and stained. Project cost overruns were caused by sanding for stain removal.

Lesson Learned: Cross Laminated Timber (CLT) has been used more successfully in other UBC projects and is recommended for future use rather than NLT.

**Sustainability**

ESC is now LEED Gold certified.

The wood design with its trusses, common open spaces and roof patio contributes positively to social sustainability.

Although Energy and Water Services (EWS) provided an electrical meter, it was installed but not connected to the data collection network so energy modelling cannot be confirmed. This issue has been observed on other projects and now will be corrected by EWS.

**Operations**

ESC was one of the first projects in which the Building Operations’ “New Building Transition Team” was involved with the Project Team. As a result the Transition Team had an early opportunity for engagement and review and to become familiar with the facility during the Commissioning process prior to handover.

A “One year warranty” review meeting was conducted and this was appreciated. A list of issues was prepared at the time and most issues were resolved.

**Landscape**

There were a number of poor landscaping details and implementation deficiencies, some of which do not comply with the UBC Technical guidelines, including: planting under a building overhang, gravel surround to the concrete plaza, 1988 class oak tree replaced with a non-oak tree. The irrigation system is now operational so hardy plants can be selected to restore the planting. UBC Municipal Services is working to resolve drainage problems in the courtyard.

The landscape was challenged by the district energy system (DES) pipe installation which resulted in primary circulation through the courtyard and rain water management being squeezed between the ESC building and the DES pipe.

On the positive side, we now have universally accessible pedestrian surfaces and gradients consistent with the larger campus and an open space that serves the social needs of the engineering community.

Lesson Learned: Future projects should ensure that Campus and Community Planning is included in the landscape architect selection process.

**Previous Report Date**

November 1, 2013

**Decision**

ESC Board 3 Approved

- 1) Board 3 approval for the Engineering Student Centre with a funding release of \$4.22 million to undertake construction, subject to construction tenders being received at or below budget, based on 80% of tenders.
- 2) Approval for an internal loan of up to \$1.76 million to support the project. This loan will be repaid over a period of up to 25 years at an expected rate of 5.75% per year, with annual debt service sourced from a project specific student fee.

**Approvals:**

Capital Budget:	\$5,220,000
Operating Budget	\$86,500
Award of Construction Contracts	
Funding Release:	\$4,220,000

**Information:**

Expenses to Date:	\$469,099
Funding Releases to Date:	\$1,000,000

**Action / Follow Up**

<b>Previous Report Date</b>	February 3, 2013
<b>Decision</b>	<p>ESC Board 2 Approved</p> <p>1) Board 2 approval for the Engineering Student Centre project, and 2) Approval to allow removal of existing structure and infrastructure in advance of Board 3.</p> <p>Approvals:</p> <p>Capital Budget:                 \$ 5,220,000 Operating Budget:             \$ 86,500</p> <p>Schedule</p> <p>Authorization to issue development permit Proceed to working drawings Demolition of existing Cheeze Factory</p> <p>Funding Release:               \$ 600,000</p> <p>Information:</p> <p>Expenses to Date:             \$ 288,000 Funding Releases to Date:   \$ 400,000</p>
<b>Action / Follow Up</b>	Action: Board 3 is dependent upon achieving firm commitments for at least \$2 million and good, identified prospects for the remaining \$410,000.
<b>Previous Report Date</b>	November 23, 2010
<b>Decision</b>	<p>ESC Board 1 Approved</p> <p>Approval:</p> <p>Preliminary Capital Budget:   \$5,070,000 Preliminary Operating Budget: \$76,712</p> <p>Schedule</p> <p>Project in Principle Location Consultant Selection Program</p> <p>Proceed to Schematic Design</p> <p>Funding Release:               \$400,000</p> <p>Information:</p> <p>Expenses to Date:             \$ 0</p>
<b>Action / Follow Up</b>	Action: Progress to Board 2 is dependent upon achieving firm commitments for at least \$750,000. Board 3 is dependent upon achieving firm commitments for at least \$2 million and good, identified prospects for the remaining \$410,000. Follow up: \$1million has been achieved with project going to February 2013 Board 2.
<b>Previous Report Date</b>	July 9, 2009
<b>Decision</b>	AMS- UBC Vancouver increase EUS fee to contribute to construction of a new ESC
<b>Action / Follow Up</b>	EUS fee for APSC engineering students increased starting in winter session 2009/10.



Attachment 1 – Photographs of Engineering Student Centre





