



SUBJECT	Faculty of Applied Science Digital Design Studio, UBC Vancouver – Board 3
SUBMITTED TO	Property Committee
MEETING DATE	November 21, 2023
SESSION CLASSIFICATION	Recommended session criteria from Board Meetings Policy: OPEN
REQUEST	<p>APPROVAL REQUESTED</p> <p>IT IS HEREBY RESOLVED that the Property Committee, in accordance with authority delegated by the Board of Governors, grants conditional* BOARD 3 approval for the Faculty of Applied Science Digital Design Studio project as follows:</p> <ul style="list-style-type: none">i. approval of final capital budget of \$13,196,000 and operating budget as set out in the Appendices to the briefing;ii. approval of final funding sources and financing as set out in the briefing;iii. authorization to proceed to award construction contracts; andiv. approval of final funding release of \$10,396,000. <p>*Conditional on construction tenders being received at or below budget based on 80% of tenders.</p>
LEAD EXECUTIVE	Frank Laezza, Vice-President Finance & Operations
SUPPORTED BY	Gage Averill, Provost and Vice-President Academic, UBC Vancouver James Olson, Dean, Faculty of Applied Science Bhushan Gopaluni, Vice-Provost and Associate Vice-President Faculty Planning John Metras, Associate Vice-President Facilities Michael White, Associate Vice-President Campus & Community Planning Yale Loh, Treasurer

PRIOR SUBMISSIONS

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

1. [June 15, 2023](#) (OPEN SESSION) – Board 2 Approval, Funding Release \$1,400,000
Action/Follow up: Authorization to proceed to working drawings and tender.
2. [June 16, 2022](#) (OPEN SESSION) – Board 1 Approval, Funding Release \$1,400,000
Action/Follow up: Proceed with schematic 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 3 approval request for the Faculty of Applied Science Digital Design Studio project is provided as part of the project management process for construction projects over \$5,000,000. The Board of Governors has delegated to the Property Committee the authority to make decisions on its behalf for construction projects between \$5 million and \$20 million. The aggregate estimated value of the Faculty of Applied Science Digital Design Studio project is \$13,196,000.

The Faculty of Applied Science (APSC) Digital Design Studio is a two-story addition to the Chemical and Biological Engineering (CHBE) building that will provide critical additional space to support APSC undergraduate and graduate students as well as the School of Architecture + Landscape Architecture (SALA) functions. The facility will be seamlessly integrated with the existing CHBE building and will facilitate improved teaching and learning.

The Digital Design Studio design process has progressed smoothly, and design has been refined to support the functional program and stakeholder needs. While the basic project components are unchanged from Board 2, the updated program reflects some minor adjustments to program components. Refer to Appendix 2: Detailed Program for further detail.

Capital Budget, Funding & Financing

The team has been diligent in designing a lean building and has engaged in a continuous value analysis process to remain on budget in an ever-escalating construction market. The capital budget and funding remain unchanged from Board 2.

Funding Source	\$
SALA Capital Investment Fund	5,000,000
Faculty of Applied Science Surplus/Reserves	8,196,000
Total Funding	13,196,000

The Faculty of Applied Science has sufficient reserves to fund the full project if the SALA Capital Investment Fund target of \$5 million is not achieved.

Sustainability

The Digital Design Studio is following UBCs Integrated Sustainability Process for Major Capital Projects and is on course to meet UBC Sustainability’s Carbon Reduction target of reducing Embodied Carbon by 10% over a comparative baseline building, aligning with CAP2030.

The project seeks to implement the most appropriate design response for the expansion facility and the decision was made to tie the expansion HVAC into the existing building’s HVAC system, which minimizes capital cost, maintenance cost and results in a reduced energy use intensity for the CHBE building as a whole. By opting for connecting to the existing HVAC plant, the project will not achieve LEED certification, as the prerequisite LEED energy efficiency improvements are not possible to be realized. Nevertheless, the project will design and construct the building as if pursuing LEED certification following a LEED shadow process.

Broader Context and Implications of Project Approval Decision

The Digital Design Studio is the immediate top capital priority for the Faculty of Applied Science. The project is relatively small and is fully funded by the Faculty, so there is no “opportunity cost” for other university capital needs that could have otherwise been addressed with this project funding. The proposed Applied One facility, which is the Faculty of Applied Science’s longer term capital priority on the UBC Five-Year Capital Plan, is a much larger project (\$314m). The immediate investment in the Digital Design Studio will not impact the ultimate development of that project.

Schedule

The project schedule is unchanged from the Board 2 Report in June 2023.

Milestone	Target Date
Executive 1+2	October 2021
New Building Site Selection Committee Confirmation	January 2022
Executive 3	May 2022
Board 1	June 2022
Board 2	June 2023
Board 3	December 2023
Construction Start	January 2024
Construction Completion	March 2025
Occupancy	May 2025
Board 4	June 2027

APPENDICES

1. Faculty of Applied Science Digital Design Studio Context Map
2. Detailed Functional Program
3. Capital Budget and Operating Costs

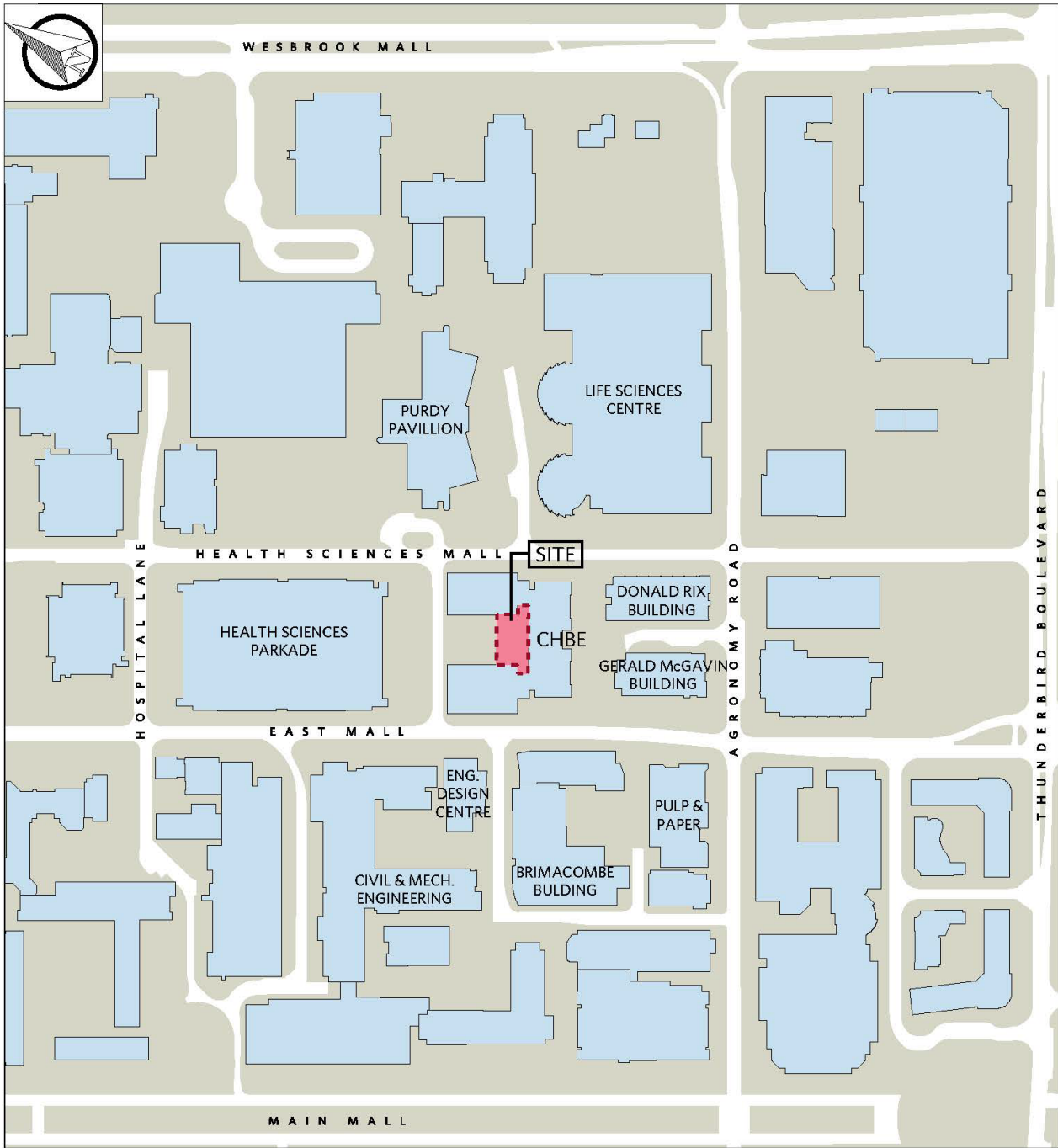
PRESENTATIONS

1. Faculty of Applied Science Digital Design Studio Board 3

SUPPLEMENTAL MATERIALS (optional reading for Governors)

1. Site Plan
2. Design Renderings

Appendix 1 – Faculty of Applied Science Digital Design Studio Context Map



Appendix 2 – Detailed Functional Program

The program has been refined to include the following components:

Component	Net Area (square metres)	Net Area (square feet)
Program Component		
Virtual Design Teaching & Learning		
Classroom/Labs & Studios	180	
Virtual Conference Rooms	45	
Sub-total Virtual Design Teaching & Learning space	225	2,422
Workshop & Fabrication		
Fabrication Shop & Storage	321	
Assembly Labs	168	
Technician Offices	12	
Sub-total Workshop & Fabrication space	501	5,393
Exhibit Area		
Gallery and lounge	123	
Sub-total Exhibit Area	123	1,324
Subtotal Net Area	849	9,139
Gross-up @ 1.11 x net area	91	980
TOTAL Building Gross Area	940	10,119

Appendix 3 – Capital Budget and Operating Costs

Capital Budget

Project Services (Facilities) has provided the following capital cost estimate update for the Applied Science Digital Design Facility project. This is a class A (pre-tender) estimate with an accuracy of +/-10%. The total budget is unchanged from Board 2.

Project Capital Cost Breakdown	\$
Construction	
Construction	8,711,000
Construction Contingency ¹	870,000
Construction Subtotal	9,581,000
Cash Allowances	
FF+E ²	200,000
Service Requests to UBC Facilities	55,000
UBC IT + AV	162,000
Secure Access	70,000
Cash Allowances Subtotal	487,000
Soft Costs	
Consultants	1,502,000
Project Management	599,000
Permits - BP/IIC	81,000
Insurance/Legal	51,000
Commissioning, Inspection + testing	230,000
Soft Costs Subtotal	2,463,000
Building Subtotal	12,531,000
GST	213,000
Construction Period Financing ³	0
Retained Risk	129,000
Escalation Contingency	323,000
PROJECT TOTAL	\$13,196,000
<i>Area (Gross Square Feet)</i>	<i>10,018</i>
<i>\$ Per Square Foot</i>	<i>\$1,317</i>

¹ A contingency is included at this time due to the inherent complexities of tying into an existing building, and unknown conditions.

² The cost of the fabrication equipment (3D printers, etc.) and digital design computers is outside this project budget.

³ Treasury has confirmed that no construction period financing is required.

Operations and Maintenance Costs

Annual operation costs will be calculated at the standard rate (\$8.60/gsf/year for new buildings) and paid by the Faculty of Applied Science. The current O&M rate is under review and may increase prior to substantial completion. Lifecycle capital costs will be funded by the UBC operating budget and Provincial government through the Routine Capital Program. Based on the current area estimates, the approximate annual operating and lifecycle costs will be as follows:

Applied Science Digital Design Facility	\$/gsf	APSC
Total Gross Area (sf)		10,119
OPERATION COSTS¹		
Annual Operations + Maintenance	\$6.37	\$4,458
Utilities	\$2.23	\$22,565
Total O+M Cost	\$8.60	\$87,023
LIFECYCLE CAPITAL COSTS²		
Cyclical Maintenance	\$3.51	\$35,518
Modernization / Upgrade	\$0.93	\$9,411
Total Capital Renewal Cost	\$4.44	\$44,928

¹ Final costs will be based on actual areas built.

² Lifecycle Capital Costs are covered by the UBC Operating Budget (Routine Capital program).



Faculty of Applied Science Digital Design Studio Board 3

November 21, 2023

John Metras, AVP Facilities



Introduction and summary



Proposed Digital Design Centre will:

- Provide cutting-edge, technology-enriched spaces supporting APSC Strategic Plan
- Add critical workshop space to encourage new pedagogical opportunities for cross-disciplinary learning and training
- Fill critical fabrication workshop gap for SALA

Additional details



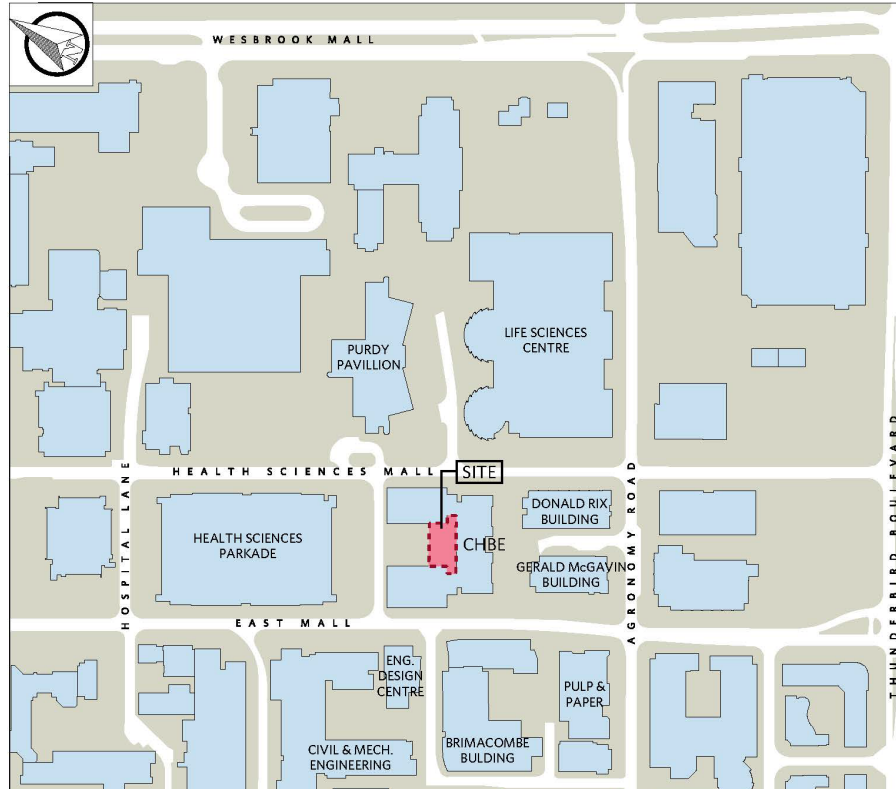
- Addition will be a 940 sq m (10,119 sq ft) facility – 162 sq m - a net increase of 19 sq m (108 sq ft)
- The minor spatial refinements are within the general workshop space
- The two-storey building is enclosed on three sides by the existing CHBE Building and fully connected to the building's atrium at both levels

Additional details



- Capital cost estimate is \$13,196,000; unchanged from Board 2
- Funding from Faculty of Applied Science, including SALA Capital Investment fund & Faculty reserves
- The Project is on course to meet UBC Sustainability's Carbon Reduction target of reducing Embodied Carbon by 10% aligning with CAP2030.

Additional details – Site Map



Additional details – Schematic Design



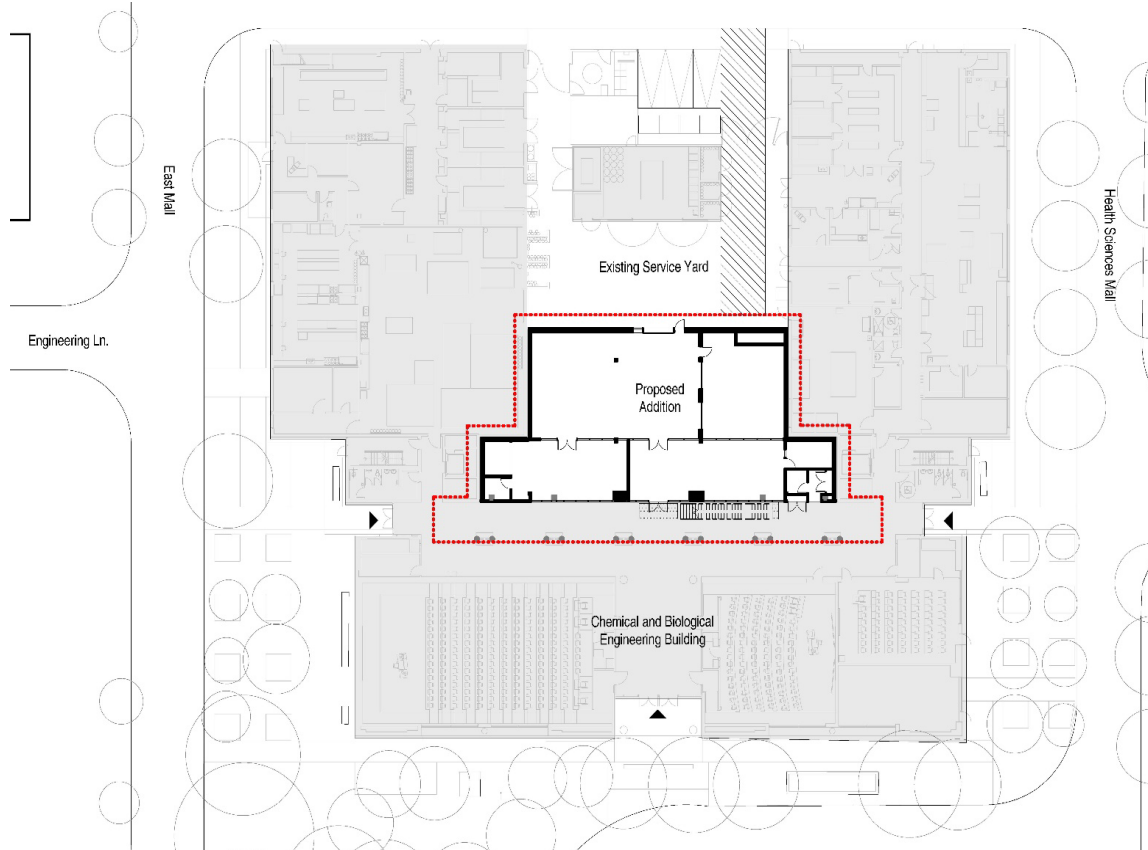
Exterior view from north service yard

Additional details – Schematic Design



Interior view of workshop space

Additional details – Site Plan



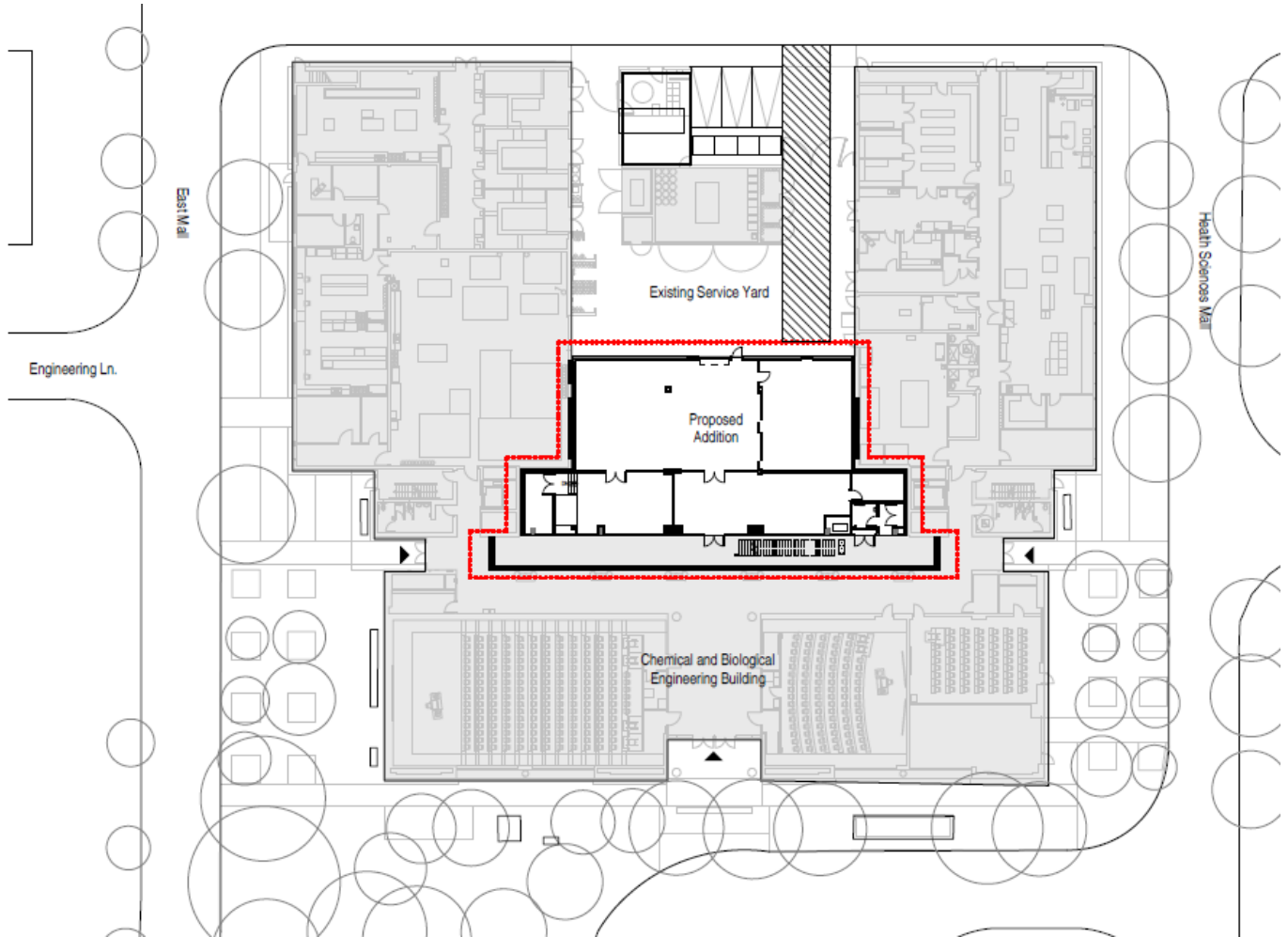
Discussion and decision points



Board 3 conditional* approval of the APSC Digital Design project:

- Approval of final capital budget of \$13,196,000 and operating budget;
- Approval of final funding sources and financing;
- Authorization to proceed to award construction contracts; and
- Approval of final funding release of \$10,396,000.
- **Conditional on construction tenders being received at or below budget based on 80% of tenders.*

Supplemental Materials 1 – Site Plan



Supplemental Materials 2 – Design Renderings

Interior view of atrium entrance from the Chemical and Biological Engineering Building



Interior view of atrium - East



Interior view of atrium - West



Interior view of assembly space



Interior view of gallery space

