



SUBJECT	Interdisciplinary Collaboration and Innovation (ICI) Building (UBC Okanagan) – Board 1
SUBMITTED TO	Property Committee
MEETING DATE	June 2, 2020
SESSION CLASSIFICATION	Recommended session criteria from Board Meetings Policy: OPEN
REQUEST	<p>Action requested - Recommendation to Board for approval</p> <p>IT IS HEREBY RESOLVED that, in accordance with the Capital Projects Policy (FM11), the Property Committee recommends to the Board of Governors approval of Board 1 for the Interdisciplinary Collaboration and Innovation (ICI) Building (UBC Okanagan) as follows:</p> <ul style="list-style-type: none"><i>i.</i> approval of project in principle;<i>ii.</i> approval of preliminary program and schedule;<i>iii.</i> approval of location;<i>iv.</i> approval of preliminary capital budget of \$108,848,000 and operating costs as set out in the Appendices of this submission;<i>v.</i> approval of funding through UBC Okanagan reserves, anticipated Federal and Provincial (AEST) contributions, donor fundraising, and an internal loan to be repaid through operating funds.<i>vi.</i> authorization to proceed to schematic design; and<i>vii.</i> approval of funding release of \$1,000,000 for the next stage of project development.
LEAD EXECUTIVE	Peter Smailes, Vice-President Finance & Operations
SUPPORTED BY	Deborah Buszard, Deputy Vice-Chancellor and Principal, UBC Okanagan Ananya Mukherjee Reed, Provost and Vice-President Academic, UBC Okanagan Philip Barker, Vice-Principal Research & Innovation, UBC Okanagan Gino Di Labio, Dean pro tem, Irving K Barber School of Arts & Sciences Gord Binsted, Dean, Faculty of Health & Social Development Roger Sugden, Dean, Faculty of Management Rehan Sadiq, Executive Associate Dean, School of Engineering Margaret Macintyre Latta, Director, Okanagan School of Education Bryce Traister, Dean, Faculty of Creative & Critical Studies John Metras, Associate Vice-President Facilities Rob Einarson, Associate Vice-President Finance & Operations, UBC Okanagan Jennifer Sanguinetti, Managing Director, Infrastructure Development Michael White, Associate Vice-President Campus & Community Planning Aubrey Kelly, President & CEO, UBC Properties Trust

PRIOR SUBMISSIONS

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

1. [June 5, 2019](#) (OPEN SESSION) On June 13, 2019 the Board of Governors approved the following resolution: IT IS HEREBY RESOLVED that the Board of Governors grants approval for submission of the UBC Five-Year Capital Plan (2020-2021 to 2024-2025) to the Ministry of Advanced Education, Skills and Training.

The following Executive Summary assumes familiarity with the prior submissions and provides a status update from the date of the most recent submission.

EXECUTIVE SUMMARY

In accordance with the [Capital Projects Policy](#), this Board 1 approval request for Interdisciplinary Collaboration and Innovation (ICI) Building 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 Interdisciplinary Collaboration and Innovation (ICI) Building is \$108,848,000.

The UBC Okanagan Campus (UBCO) is proposing a new building, tentatively titled the Interdisciplinary Collaboration and Innovation (ICI) building, that will begin to address the critical space shortage on the Okanagan campus while facilitating world-leading, interdisciplinary/ transdisciplinary research and academic programming. It is critical to advancing Outlook 2040, as well as being vital to ensuring the success of the President's Academic Excellence Initiative.

This new project will advance the mandate of UBCO as a partner in regional development and represents an important contribution towards reconciliation commitments made in 2019. The ICI building will be 13,564 gross square metres (146,000 gross square feet). The building will house approximately 62 research professors (half existing, half new) and 342 research graduate students and post-doctoral scholars. It will address approximately 34% of the campus' current space shortfall, and is critical to supporting the research trajectory of the campus, where research income has increased 258 percent over the past five years. The space freed up by moving existing research groups into the new collaborative spaces will allow reuse of those areas to further address critical space shortages.

The ICI building will bring social sciences, natural sciences, humanities, creative fields and professional disciplines together to facilitate collaboration and enable breakthroughs to solve real world challenges. The building will be designed with maximum flexibility, providing shared and common infrastructure, enabling clusters of interdisciplinary research and teaching activity in areas that will include high value agriculture, health and data, with social and economic regional development and indigeneity as overarching themes.

The building will also include 100 and 200 seat lecture theatres serving the campus need for large teaching spaces. The 100 seat space will be circular, level, and designed to reflect and support indigenous learning on campus, including the new Bachelor of Nsyilxcn Language Fluency.

The ICI Building is part of an overall capital plan to respond to critical space shortages on the Okanagan campus. The other two components of this plan are a UBC Properties Trust-led development in downtown Kelowna and backfill areas resulting from the relocation of faculty to the ICI building that will be repurposed to accommodate current unmet needs for office, lab and graduate student space and faculty renewal and replacements.

Overall space audits show that at present, available teaching labs, research space, and academic offices fall far below BC University (BCU) and Council of Ontario Universities (COU) space standards (see Table below). The space shortage on the UBCO campus is impeding progress and has the potential to thwart the outstanding research trajectory at UBC Okanagan.

Category	UBCO Current m ²	BCU Standard m ²	COU Standard m ²	BCU % Shortfall	COU % Shortfall
Teaching Labs	8,719	15,502	16,376	44%	47%
Research Labs	10,159	13,372	17,416	24%	42%
Academic Offices	9,030	17,628	13,427	49%	33%

The total space shortfall for the campus, based on the 2019 Facilities Inventory and Needs Overview, is 420,000gsf – the ICI will alleviate 34 percent of this shortfall.

The following Functional Program has been developed with user groups and stakeholders representing the interdisciplinary learning and research themes in ICI.

Interdisciplinary Collaboration and Innovation (ICI)	NSM	NSF
Program Component		
1. Main Entry & Community Engagement	694.0	7,470
2. Teaching and Learning:	1,518.2	16,342
3. Student & Programs Support:	651.5	7,013
4. Participants and Community Engagement	790.6	8,510
5. Data Science Research Labs & Offices	798.1	8,591
6. Biomedical Health & Technology, Physical and Life Science Research Labs & Offices	2,985.0	32,130
7. Example Research Cores & Lab Support	442.6	4,764
8. General Building Support	340.5	3,665
SUB-TOTAL COMPONENT NSM	8,220.5	88,485
Building Gross Up (~1.65)	5,343.5	57,515
TOTAL ICI BUILDING	13,564	146,000

Sustainability Objectives

The building will target LEED Gold certification as a minimum, with a defined energy use intensity target as per UBC requirements. Given recent Board endorsement of the President’s Climate Emergency Declaration and sustainability priorities, staff will integrate the goal to reduce the carbon footprint of the building and its operation and to identify cost-effective measures that reduce both embodied and operational carbon through the design development process.

Preliminary Schedule

The following schedule has been developed in consultation with UBC Properties Trust.

MILESTONE	TARGET DATE
Executive 1	December 2018
New Building Site Selection Committee	February 2020
Executive 2 + 3	April 2020
Board 1	June 2020
Board 2	June 2021
Board 3	June 2022
Construction Start	July 2022
Construction Completion	December 2024
Occupancy	January 2025
Board 4	March 2027

Site

The proposed new 146,000 gross square foot (13,564 gross square metres) building will be located on Site 20, as a gateway building, on Alumni Avenue adjacent to the EME building in the Nonis neighbourhood. The site's proximity to the campus core will facilitate interdisciplinary research and teaching activities. The siting will allow design of ICI to celebrate indigeneity and connect pedestrians from central campus and building users to valued natural areas to the east through an elevated viewing platform and catwalk at the junction between Site 20 and the EME Building. As part of the design development process, the project team will explore ways to allow space for EME Building expansion.

Preliminary Capital Budget and Operating Cost

The estimated capital budget for the project is \$108,848,000, including a construction contingency of \$3.4 million, and an extraordinary escalation of \$4.0 million to address recent market conditions and allow for uncertainties in estimating during these current challenging times.

Annual operations, maintenance and utilities costs for the building will be calculated at the standard rate (currently \$8.60/gsf for new buildings). The Interdisciplinary Collaboration and Innovation (ICI) building annual operating costs will be covered by the UBC Okanagan operating budget. The lifecycle capital costs will also be funded by the operating budget. A detailed breakdown of the preliminary Capital Budget and Operating Costs are shown in Appendix 2.

Funding Sources/Financing

The capital project will be funded through the UBC Okanagan reserves, anticipated Provincial (AEST) contribution, donor fundraising, and an internal loan to be repaid through operating funds. The table below shows the breakdown of the funding contributions.

Funding Source	
UBC Okanagan (Capital Reserves, TREK) - confirmed	\$20,000,000
Federal and Provincial investment - targeted	\$30,000,000
Philanthropy/Donor Funding - stretch target	\$10,000,000
Internal Loan	*\$48,848,000
Total	\$108,848,000

*Financing of the internal loan for the ICI should be considered along with the annual funding required for the Downtown project as part of a three-phase plan. An initial overall funding strategy is in place that will enable the financing of the ICI Building and accommodate a lease on approximately 80,000 sq.ft. at a downtown location. The \$48.848 m loan financed over a 30 year term at a 5.75% interest rate will be co-funded by the UBCO operating fund and the UBCV operating fund. UBCO will pay 3% interest (\$2.49m annually) and UBCV will pay 2.75% interest (\$960k annually) on the loan for a combined 5.75% rate. For the Downtown location, an annual lease of 80,000 sq.ft. at a lease rate of \$30 psf will require an annual lease payment of \$2.4m. The lease rate assumes the proceeds totaling \$7m from the UBCO East Campus land sale to the City of Kelowna will be applied as a prepayment of rent. The UBCO internal debt financing with the ICI Building loan will fall within the 3% of total forecasted revenue limit. UBC Treasury has reviewed the funding plan and considers the plan sustainable. It should be noted that the donor target is a stretch goal backstopped by an increased loan amount if needed.

The ICI Building is considered a priority capital project and sufficient liquidity is available to fund this project. A detailed breakdown of the Debt Service Capacity is shown in Appendix 3.

APPENDICES

1. Academic context
2. Context Map of Location
3. Costs – Preliminary Capital Budget and Operating Costs
4. Debt Service Capacity



Interdisciplinary Collaboration & Innovation (ICI) Building

June 2, 2020

John Metras, Associate Vice-President Facilities



Introduction and summary



Proposed ICI Building will:

- Begin to address critical UBCO space shortage especially with research space
- Facilitate world-leading, interdisciplinary/transdisciplinary research and academic programming

Strategic plan alignment



Goals:

- 1. Lead globally in research excellence...
- 2. Partner with Indigenous communities...

Core areas and strategies:

- S2. Inspiring spaces
- S6. Collaborative clusters
- S14. Interdisciplinary education

Additional details



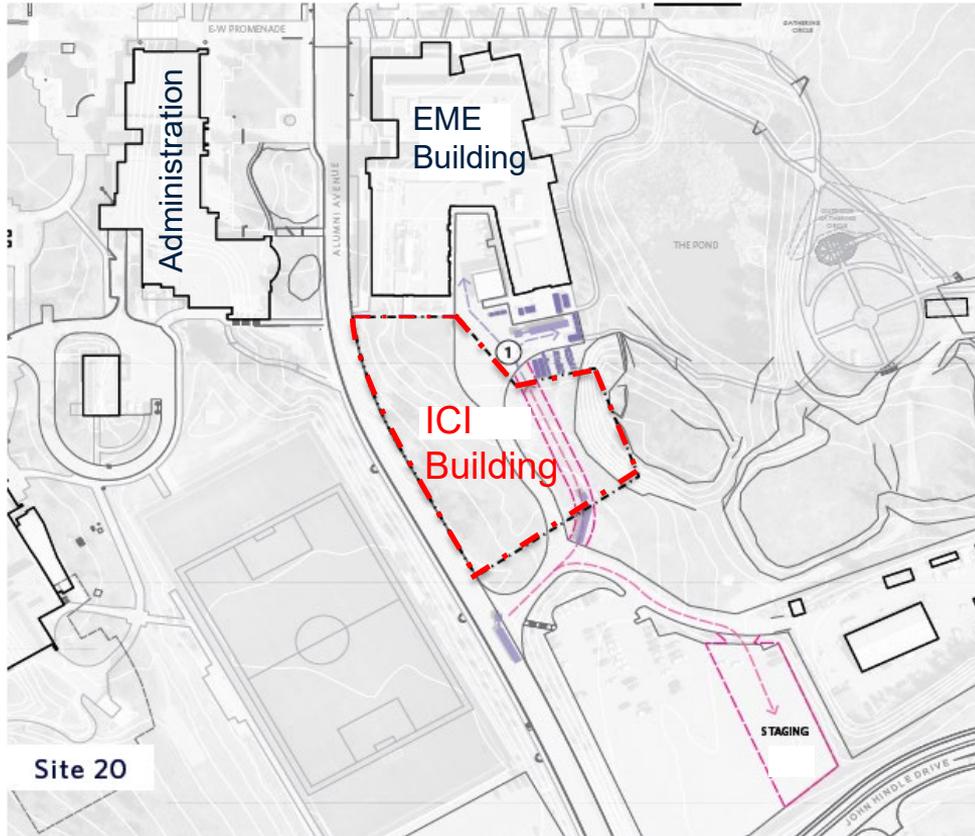
- Building will be 13,564 m² (146,000 ft²)
- Will house 62 research professors (1/2 existing, 1/2 new) + 342 research grad students and post-doc scholars
- Will support Outlook 2040 and President's Academic Excellence Initiative

Additional details



- Site is proximate to campus core & transit
- Includes 100 & 200 seat lecture theatres
- 100 seat space is circular to reflect & support Indigenous learning
- Current capital cost est is \$108.848 m
- Funding anticipated from UBCO reserves, operating budget, government & donors

Additional details – Site Map



Discussion and decision points



Board 1 approval of the ICI Building project:

1. approval of project in principle;
2. approval of preliminary program and schedule;
3. approval of location;
4. approval of preliminary cap budget of \$108,848,000 & op costs;
5. approval of the preliminary funding strategy;
6. authorization to the University administration to proceed to architect selection and schematic design; and
7. funding release of \$1,000,000 to commence schematic design.

Appendix 1 – Academic Context

The Okanagan campus population has grown significantly - from 7,000 students to 11,000 students between 2010 and 2020. The UBCO Commons, completed in 2019, provided critical teaching, learning and study spaces and was partially financed by UBCO students. Except for this project, there have been no new capital projects at UBCO since 2007, despite an over 300 percent increase in research intensity since 2010. Given this, the campus now faces a critical space shortage. Overall space audits show that at present, available teaching labs, research space, and academic offices fall far below BC University (BCU) and Council of Ontario Universities (COU) space standards (see Table below). The space shortage on the UBCO campus is impeding progress and has the potential to thwart our outstanding research trajectory.

Category	UBCO Current m ²	BCU Standard m ²	COU Standard m ²	BCU % Shortfall	COU % Shortfall
Teaching Labs	8,719	15,502	16,376	44%	47%
Research Labs	10,159	13,372	17,416	24%	42%
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The total space shortfall for the campus, based on the 2019 Facilities Inventory and Needs Overview, is 420,000gsf – the ICI will alleviate 34 percent of this shortfall.

In addition to significantly addressing the current space shortfall, the Interdisciplinary Research and Innovation (ICI) building will provide much-needed research space and will enable recruitment of top research faculty who will work within and across research themes. The ICI building will be designed to provide laboratory space, teaching facilities, maker space, faculty offices, and will house numerous graduate and post-doctoral students. The ICI building will house academic programs and collaborative research across four thematic areas: Climate and High Value Agriculture (HVA), Health, Data, and Social and Economic Regional Development (SERD). These areas of research reflect the following:

- Alignment with UBC’s strategic plan and Outlook 2040;
- Relevance to the region, and potential for significant social impact;
- Current research strengths of UBCO faculty, and planned targeted recruitments;
- Potential for indigenization and indigenous engagement;
- Potential for synergy between the UBC campuses; and
- Potential for translating the knowledge generated by research into unique interdisciplinary academic programs.

Examples of Faculty driving these themes include:

- Dr. Mina Hoorfar, Head of the Advanced Thermo-Fluidic Laboratory. Dr. Hoorfar works with several interdisciplinary teams and her work on digital sensors and biosensors has direct impacts for human health and environmental monitoring. Since joining UBCO, Mina has attracted more than \$4M in research funding and she was named UBCO Researcher of the Year in 2016.
- Dr. Mike Deyholos, Chair of Biology at UBCO, is a geneticist and bioinformatician whose work focuses on stress tolerance and microbe interactions of high value plant species. Mike has attracted over \$1M in funding since joining UBCO in 2014 and was named UBCO Researcher of the Year in 2017. Dr. Deyholos

and Dr. Joerg Bohlmann (UBCV) have been key players working towards the establishment of a new Michael Smith Lab within the ICI at UBCO.

- Dr. Feng Chen, recently named a UBCO Principal Research Chair, is an expert in information and coding theory, wireless communications and networking, and cloud computing and co-leads Canada’s only NSERC Create grant on blockchain technology.
- Dr. Ramon Lawrence focuses on data virtualization, data integration, embedded databases, and big data analysis and is the Director of UBCO’s Data Science Program.
- Dr Eric Li examines issues around social enterprise, social innovation, and pro-social behaviour., Dr. Li, a Kelowna Top 40 Under 40 in 2018, brings expertise in marketing, consumer well-being and health promotion to a variety of interdisciplinary projects as a member of UBC’s Institute for Healthy Living and Chronic Disease Prevention, the UBC Clean Energy Research Centre, and Blockchain@UBC.
- Dr. Jeanette Armstrong, a Canada Research Chair in Okanagan Indigenous Knowledge and Philosophy, analyzes Syilx traditional knowledge to obtain information about Syilx society and knowledge. Jeanette has addressed barriers to research by surveying, analyzing and categorizing Syilx captikwl (mythology) and smamay (legends) from a variety of published and unpublished collections. Dr. Armstrong’s research is opening new ground by making indigenous Syilx knowledge of ecological and sustainability practices applicable to governance, land use and health.

The ICI building will provide the physical environment and the visibility that is required for these research and teaching aspirations to succeed, act as concrete evidence of the commitment of UBC to interdisciplinary approaches, and will be a focal point for community and student engagement. UBC Okanagan aspires to be a leader in indigenization of research and pedagogy and we intend to house the Canada Research Chair in Okanagan Nation Philosophy and several other indigenous scholars in the ICI. Through specialized and flexible design, the building will help UBCO advance the goals of inclusion and transformative learning, a key focus of the Okanagan School of Education. Together with UBCO’s relationship with the Okanagan Nation Alliance (ONA), the concentration and support of these activities will be key to achieving UBCO’s and the ONA’s aspirations and fulfillment of critical Indigenous Strategic Plan objectives.

The initiatives contemplated here will create a community of approximately 62 faculty (including 30 new faculty to be recruited in the next 10 years), 342 graduate students and post-doctoral researchers, and house 5 new graduate and undergraduate programs. Importantly, it will provide much needed study and office space for students in our Interdisciplinary Graduate Studies (IGS) program. It is expected that the relocation of faculty members, graduate students and laboratory space will free space in existing facilities; this will allow repurposing of these areas as non-STEM research spaces and teaching labs and enable development of dedicated space for students with disabilities and an integrated student health center.

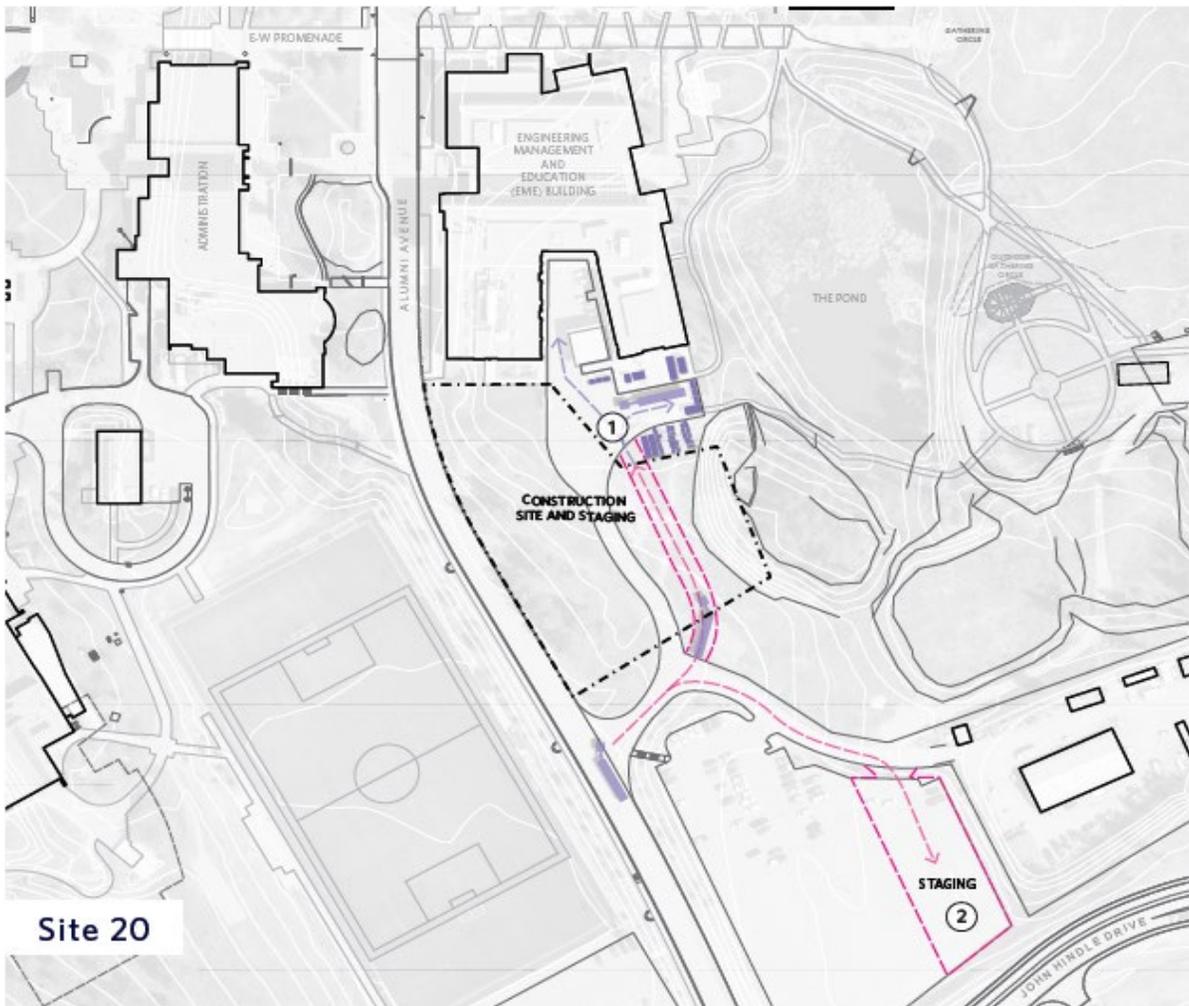
In the near term and in parallel with the ICI Building, UBCO is undertaking additional projects to respond to the current space shortfall. The following table summarizes these projects:

Projects Addressing Space Shortage		
Proposed Project	Project End Date	Project Size (GSF)
Interdisciplinary Collaboration and Innovation (ICI) Building	2024	146,000
Downtown Project (UBCO Leased Space)	2024	80,000
UBCO Campus ‘Backfill’ Project	2026	20,000-25,000

The proposed ICI building will help UBC Okanagan advance several key goals:

- accelerate research in key areas local and global impact;
- advance indigenous engagement;
- enable research faculty recruitment;
- enhance graduate student research and learning
- and free up space for critical student services.

Appendix 2 – Context Map of Location and Site 20 Massing Study



Lot 20 Site - South of EME Building



Site 20 – Massing Study

Appendix 3 – Preliminary Capital Budget and Operating Costs

Preliminary Capital Budget

UBC Properties Trust has provided the following **preliminary** project cost estimate for the new Interdisciplinary Collaboration and Innovation (ICI) building. This is a class D estimate with an accuracy of +/-30%. **This estimate has been put together during challenging times to estimate. A construction manager will also be looking at the ICI Building project to verify the preliminary budget estimate.**

Project Capital Cost Breakdown	\$	\$/gsf
Construction Costs		
Construction	68,280,000	
Public Realm and Roadworks	1,500,000	
Subgrade Conditions	810,000	
Site Servicing (WSP Report)	3,645,000	
Contingency	3,414,000	
Total Construction	77,649,000	
Cash Allowances		
FF+E	4,500,000	
Design/Owner Contingency	1,640,000	
UBC IT	1,500,000	
Secure Access/Signage/Moving	750,000	
Audio Visual	1,800,000	
Total Cash Allowances	10,190,000	
Soft Costs		
Consultants	6,988,000	
Preconstruction/Permits	932,000	
DCC's	1,473,000	
GEID	500,000	
Total Soft Costs	9,893,000	
Building Subtotal	97,732,000	
Project Management	2,441,000	
GST	1,632,000	
Building Total	101,805,000	
Construction Period Financing	2,000,000	
Extraordinary Escalation/future conditions	4,001,000	
Retained Risk	1,042,000	
TOTAL PROJECT	\$108,848,000	\$745
Area (Square Feet)	146,000	

Operating Costs

Annual operating costs will be calculated at the standard rate (\$8.60/gsf for new buildings) for the Interdisciplinary Collaboration and Innovation (ICI) building. Based on the current area estimates, the **preliminary** approximate annual operating and lifecycle costs (not including the Research Core operating costs) will be as follows:

ICI Building	\$/gsf	ICI
Total Gross Area		146,000
OPERATION COSTS¹		
Annual Operations + Maintenance	\$ 6.37	\$930,020
Utilities	\$ 2.23	\$325,580
Total O+M Cost	\$ 8.60	\$1,255,600
LIFECYCLE CAPITAL COSTS²		
Cyclical Maintenance	\$ 3.51	\$512,460
Modernization / Upgrade	\$ 0.93	\$135,780
Total Capital Renewal Cost	\$ 4.44	\$648,240

1 and 2 Final costs will be based on actual built areas.

Appendix 4 –Debt Service Capacity

UBCO Debt Service Capacity (000's)	2024	2025	2026	2027	2028
Expected Annual Revenues (UBCO)	227,000	232,000	237,000	242,000	248,000
Maximum Debt Servicing Capacity (3%)	6,810	6,960	7,110	7,260	7,440
Less: Existing Debt Costs (UBCO)	(3,032)	(3,032)	(3,032)	(3,032)	(3,032)
Less: ICI Building	(2,490)	(2,490)	(2,490)	(2,490)	(2,490)
Remaining Debt Service Capacity	1,288	1,438	1,588	1,738	1,918