



SUBJECT School of Biomedical Engineering (SBME) Clean Room Tenant Improvement Project
Board 1, Board 2, and Board 3

SUBMITTED TO Board of Governors

MEETING DATE January 31, 2024

SESSION Recommended session criteria from Board Meetings Policy:
CLASSIFICATION OPEN

REQUEST APPROVAL REQUESTED

IT IS HEREBY RESOLVED that the Board of Governors grants BOARD 1, BOARD 2 and BOARD 3 approval for the School of Biomedical Engineering (SBME) Clean Room Tenant Improvement project at UBC Vancouver as follows:

- i.* approval of the project in principle;
- ii.* approval of program and schedule;
- iii.* approval of final capital and operating budgets;
- iv.* approval of final funding sources and financing, if applicable;
- v.* authorization to proceed to award construction contracts; and,
- vi.* approval of final funding release of \$6,856,000.

LEAD EXECUTIVE Frank Laezza, Vice-President Finance & Operations

SUPPORTED BY Gage Averill, Provost and Vice-President Academic, UBC Vancouver
Dermot Kelleher, Dean, Faculty of Medicine and Vice-President Health
Peter Zandstra, Director, School of Biomedical Engineering
James Olson, Dean, Faculty of Applied Science
Bhushan Gopaluni, Vice-Provost and Associate Vice-President Faculty Planning
John Metras, Associate Vice-President Facilities
Denise Brown, Director, Capital Planning & Development
Yale Loh, Treasurer
Aubrey Kelly, President & CEO, UBC Properties Trust

PRIOR SUBMISSIONS

The subject matter of this submission has not previously been considered by the Property Committee.

EXECUTIVE SUMMARY

In accordance with the [Capital Projects Policy](#), this Board 1, Board 2, and Board 3 approval request for School of Biomedical Engineering (SBME) Clean Room Tenant Improvement (TI) project is provided as part of the project management process for construction projects over \$5,000,000. The aggregate estimated value of the SBME Clean Room TI project is \$6,856,000.

Project Background

The School of Biomedical Engineering (SBME), a partnership between the Faculties of Medicine and Applied Science, is a strategic priority for the University, both Faculties and the province. The vision of the School is to transform patient health and healthcare outcomes through unconstrained exploration of the best possible integrative solutions across engineering, medicine, and biology. The SBME, as the first comprehensive inter-faculty School of Biomedical Engineering in Canada, plays a central role in British Columbia's and Canada's leadership in biomedical entrepreneurship.

To support SBME's ambitious goals, rapid expansion and properly meet the demand and promise of the School, a dedicated building for research, education and innovation was deemed necessary. The SBME Building project was approved by the Board of Governors to proceed to construction in March 2022. The new building, which is targeting construction completion in December 2024, will include innovative learning spaces, laboratories for transformative research, facilities for research support, office space for new faculty and general teaching space.

As part of the project, a shell space in the basement of the new SBME building was allocated for a clean room. The objective of creating a shell space was to provide the time required to develop the detailed design for the research-intensive space and secure the necessary funding to fit-out the clean room space. Planning and design for the clean room tenant improvements (TI) is now complete and the TI construction scope has been issued for tender.

Project Description

The proposed clean room facility will be first of its kind in Western Canada with a biomedical thematic focus. The BioDevice Foundry (clean room) will be a common access facility for the design, fabrication, and application of biodevices, driving innovation across biological scales (molecular to whole organism) while positively impacting the medtech / biotech sectors in BC and beyond.

The facility will co-localize semiconductor device fabrication (clean-room) with bio-functionalization, 3D prototyping, precision machining and characterization facility. This co-localization will enable activities around heterogeneous integration of biomolecules (DNA, RNA, proteins, cells etc.) within microdevices by accommodating "non-traditional" chemical and biological processes, specialized tools, and integration within the workflows on materials uncommon in semiconductor facilities (such as glass and plastics) - thereby filling a major gap in the field.

In addition to providing the much-needed tools and technologies for such medtech/biotech-oriented research, this facility will serve as a hub for early-stage development of new technological solutions in health sciences supported by SBME Innovates; and provide state-of-the-art infrastructure and training for established businesses to explore new R&D opportunities and catalyze new biotechnologies and ventures.

The proposed facility is forecasted to be used by over 20 faculty members and 50 students, and more than 10 industry partners. The clean room will play a critical role in driving innovation in health technology development, commercialization, and potential for responsiveness.

Capital Budget

The clean room equipment is not included in the construction project budget and is not part of this approval request. The equipment will be procured and approved separately in accordance with the Capital Purchase provisions of UBC Policy FM11 (Capital Projects, Capital Purchases & Internal Loans) and the Signing Resolutions.

PROJECT	AMOUNT
Construction Project	\$ 6.86 million (subject of this approval request)
Research Equipment Procurement (Non-construction)	\$ 10.00 million (subject of separate procurement process)
TOTAL	\$ 16.86 million

Funding & Financing

The SBME Clean Room TI project will mostly be funded by a secured PacifiCan grant and private donor (\$5.75 million). The remaining amount will be funded through the SBME Building project contingency (currently in construction). Contingency at project completion is estimated to be sufficient to cover the \$1.11 million funding contribution for the Clean Room project. If the private donor funding and/or project contingency funding is insufficient, SBME will backstop the required funding contribution with its reserves.

Funding Source	Amount
PacifiCan Grant	\$ 4,500,000
Private Donor*	\$ 1,250,000
SBME Building Project Contingency*	\$1,106,000
Total	\$ 6,856,000

*The private donor funding and SBME Building Project Contingency contribution is backstopped by the School of Biomedical Engineering (SBME) reserves.

Schedule

The schedule below has been developed by UBCPT. The delivery, assembly and calibration of equipment is not included in this schedule.

MILESTONE	TARGET DATE
Executive 1, 2, 3	January 2024
Board 1, 2, 3 Approval	January 2024
Construction Start	February 2024
Construction Completion	December 2024
Occupancy	January 2025

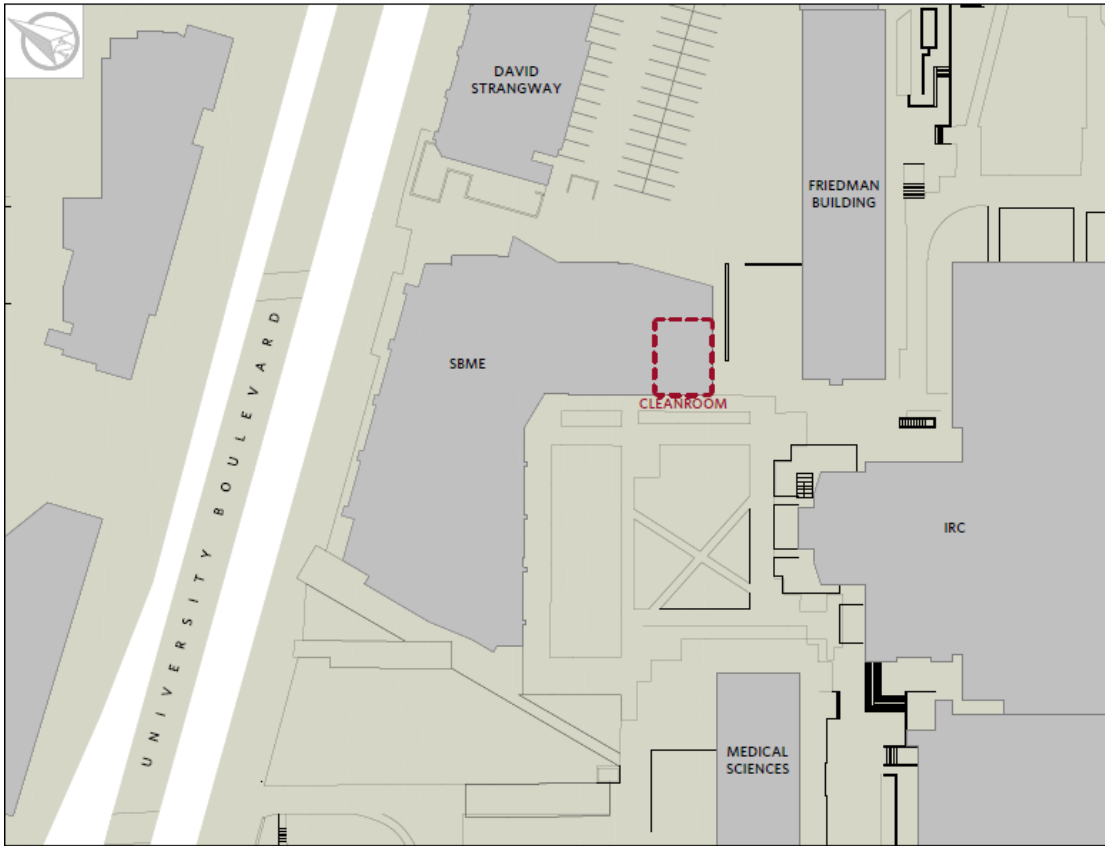
APPENDICES

1. Context Location Map
2. Functional Program
3. Capital Budget and Operating Costs

PRESENTATIONS

1. School of Biomedical Engineering Building (SBME) Clean Room TI Board 1,2,3 Approval Request

Appendix 1 – Context Location Map



Appendix 2 – Functional Program

The proposed tenant improvement project will create the following functional spaces for the clean room:

Program Component	Net Area (Square Metres)	Net Area (Square Feet)
Ante Room ISO 6	23	
Deposition / Dry Etching ISO 7	42	
Equipment Utility Room (Unclassified)	81	
Lithography (Yellow Rm) ISO 6	22	
White Rm ISO 6	47	
Total Net Area	215	2,322

Appendix 3 –Capital Budget and Operating Costs

Capital Budget

UBC Properties Trust (UBCPT) has provided the following project cost estimate for the SBME Clean Room TI). The project estimate is based on tender numbers obtained in January 2024. The clean room design has undergone revisions to realize cost savings considered in the estimate.

Project Capital Cost Breakdown	\$
Construction Costs	
Construction	\$6,153,000
Construction Contingency	\$530,000
Total Construction	\$6,683,000
Cash Allowances and Soft Costs¹	\$0
Building Total	\$6,683,000
Retained Risk	\$67,000
Escalation Contingency	\$0
Construction financing ²	\$0
GST	\$106,000
PROJECT TOTAL	\$6,856,000
<i>Area (net square feet)</i>	<i>2,322</i>
<i>Cost per square foot (\$/sf)</i>	<i>\$2,953</i>

¹ Cash allowances and soft costs have been absorbed by the SBME Building project. Equipment will be procured separately - see below.

² All funding is in hand and no construction period financing is required.

Operations and Maintenance Cost

There is no increase in building area for this project, and therefore no significant additional operating costs for the base building. Operating and maintenance costs for all specialized building systems and research equipment related to the clean room are the responsibility of the School of Biomedical Engineering.



School of Biomedical Engineering Building (SBME) Clean Room TI Board 1,2,3 Approval Request

January 31, 2024

John Metras, Associate Vice-President, Facilities



Introduction and summary



The School of Biomedical Engineering (SBME) Clean Room Tenant Improvement (TI) project:

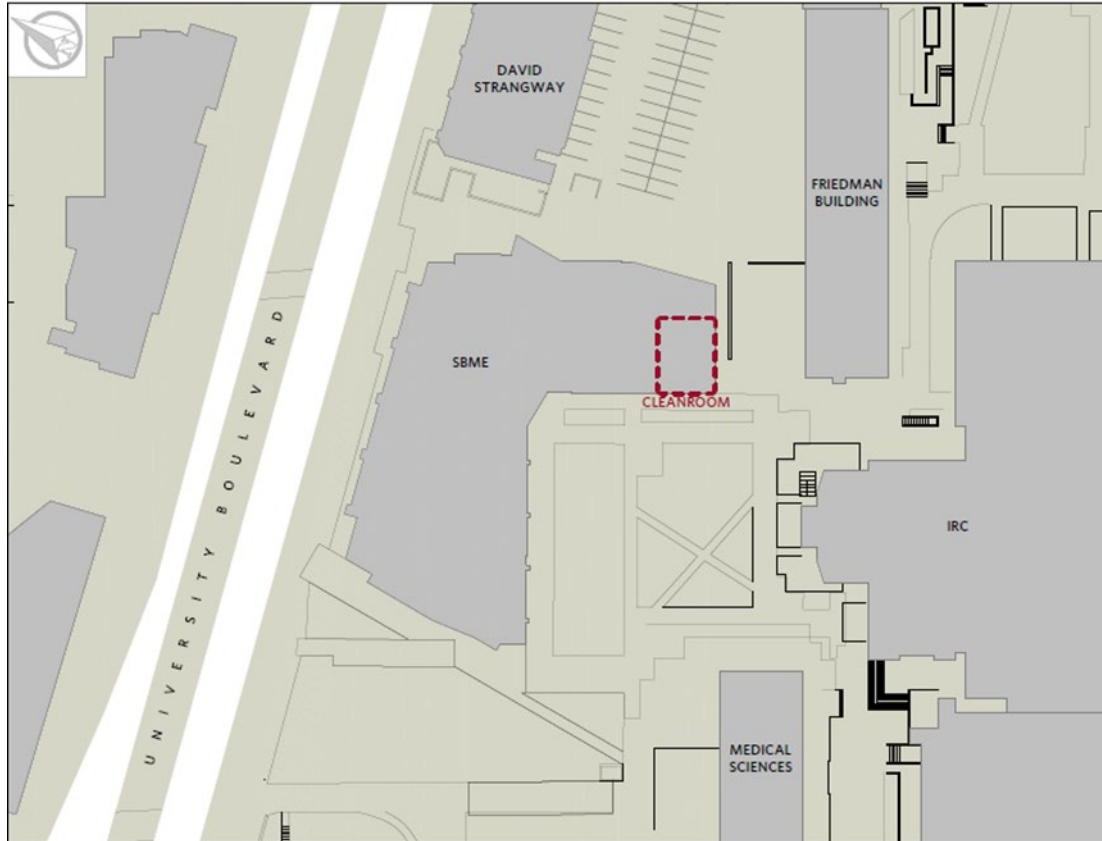
- The SBME is building a new facility for research, education and innovation, which will be completed by December 2024.
- The new facility will include a shell space for a future clean room in the basement.
- The clean room, to be called the BioDevice Foundry, will be designed and built to focus on biodevices.

Introduction and summary



- The clean room will support innovation across different biological domains and will be used by faculty members, students and industry partners for various research projects.
- The project has a budget of \$6.86 million, that will be funded by a PacifiCan grant, a private donor and the SBME Building project contingency.
- The project requires Executive and Board approvals in January 2024 to meet the PacifiCan deadlines.

Additional details – Site Map



Discussion and decision points



Board 1, 2 and 3 approvals of the SBME Clean Room TI project :

1. Approval of final capital budget (\$6,856,000) & operating budget;
2. Approval of final funding sources & financing;
3. Authorization to award construction contracts; and;
4. Approval of final funding release of \$6,856,000.