



SUBJECT	Beaty Biodiversity Centre Addition, UBC Vancouver
SUBMITTED TO	Property Committee
MEETING DATE	April 7, 2021
SESSION CLASSIFICATION	Recommended session criteria from Board Meetings Policy: OPEN
REQUEST	Action requested - Recommendation to Board for approval IT IS HEREBY RESOLVED that the Property Committee recommends that the Board of Governors grant BOARD 1 approval for the Beaty Biodiversity Centre Addition as follows: <ul style="list-style-type: none"><i>i.</i> project in principle;<i>ii.</i> preliminary program and schedule;<i>iii.</i> location;<i>iv.</i> preliminary capital budget of \$40,000,000 and operating costs as set out in the Appendices to the briefing;<i>v.</i> preliminary funding strategy as outlined in the section Funding & Financing;<i>vi.</i> authorization to proceed to schematic design; and,<i>vii.</i> a funding release of \$1,000,000 for the next stage of project development.
LEAD EXECUTIVE	Peter Smailes, Vice-President Finance & Operations
SUPPORTED BY	Andrew Szeri, Provost and Vice-President Academic, UBC Vancouver Meigan Aronson, Dean, Faculty of Science Pam Ratner, Vice-Provost and Associate Vice-President Enrolment & Academic Facilities John Metras, Associate Vice-President Facilities 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 not previously been considered by the Property Committee.

EXECUTIVE SUMMARY

In accordance with the [Capital Projects Policy](#), this Board 1 approval request for the Beaty Biodiversity Centre Addition 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 Beaty Biodiversity Centre Addition is \$40 million.

Background and Rationale

UBC is one of the world's leading institutions in biodiversity research. The University ranks #1 in Canada and between 5th and 8th globally in Ecology, Biodiversity Conservation, and Evolution. This prominence is largely the result of an exceptional group of 74 faculty who comprise the Biodiversity Research Centre (BRC), including 16 Fellows of the Royal Society of Canada in evolution and ecology - more than double that of any other university in Canada. UBC's exceptional facilities and reputation have allowed the University to recently recruit international stars to fill President's Excellence Chair and Canada 150 Chair positions.

As its research excellence soars, the physical space of the Biodiversity Research Centre, where the majority of active BRC faculty are located, has become acutely limiting. The existing building was originally sized to accommodate projected growth, but in the intervening decade both the enriching environment and the research group's reputation have become such positive recruitment tools that growth has exceeded expectations. Demand for space in the BRC continues to grow and additional space is required.

Project Description

The proposed project is an approximately 4,100 gross square metre addition to the existing Beaty Biodiversity Centre (BBC), a 12,060 gross square metre building built in 2009 to house the Biodiversity Research Centre (BRC) and the Beaty Biodiversity Museum (BBM). The addition will provide much-needed space for expansion of research and museum activities, and is intended to:

- Accommodate approximately 10 additional faculty and teams who will request space over the next 10 years, including new hires in the biodiversity sciences as part of UBC's President's Academic Excellence Initiative (PAEI);
- Provide space for young-junior faculty to grow their teams, as they are currently allocated minimal space in the existing building;
- Allow the BRC to apply for Chairs and other major awards as there is currently no space for researchers attracted to the dynamic intellectual environment of the BRC;
- Provide space for the recently launched Conservation Science Initiative which is intended to develop and extend partnerships with conservation organizations; and
- Provide additional space for the Beaty Biodiversity Museum to accommodate growth in collections, development and storage of exhibits. It is also anticipated that a collaboration between the Conservation Science Initiative and the Museum will enhance programming and public outreach.

The proposed project supports several Core Areas and Strategies in UBC's Strategic Plan 2018-2028, *Shaping UBC's Next Century*. The Biodiversity community is composed of researchers from several different Faculties who come together in a collaborative setting to address global issues. The goal of the Beaty Biodiversity Centre Addition project is to expand this capacity, with the program specifically including an expansion of collaboration spaces. The project directly supports Core Area One People and Places, Strategy 2 Inspiring Spaces and Strategy 3 Thriving Communities, and Core Area Two Research Excellence Strategy 6 Collaborative Clusters. The project will provide capacity to support Core Area Four Local and Global Engagement Strategy 16 Public Relevance. [UBC Strategic Plan, 2018-2028](#)

Preliminary Program

A Functional Program was developed for the BRC and BBM. The program reflects the fact that there will be rooms on each floor that will be impacted at the existing/addition connection points, but the extent of this impact will not be known until well into schematic design. The design team may also identify opportunities for consolidation of functions in the new building and backfilling of spaces in the existing building. As a result of these unknowns, a decision was made to capture all new BRC and BBM space requirements in the Functional Program, with the understanding that not all of these requirements were likely to be accommodated in the new Addition. The final Addition program areas and configuration will be developed through the design process. The primary program components are as follows:

Beaty Biodiversity Centre - Program Component	square metres	square feet
Net Areas		
Biodiversity Research Centre		
Workspace: dry labs + support rms, theory rms, faculty offices, shared PDF/grad student offices	1,870	20,125
Conservation Science Initiative - shared offices, GIS lab	108	1,163
Beaty Biodiversity Museum		
Public Functions: offices, workshop, volunteer room, dry lab, storage	409	4,397
Collections: digitization lab, fossil repository, storage (collections)	231	2,488
Beaty Biodiversity Centre Common Spaces (Shared)		
Shared meeting rooms, collaboration spaces, multipurpose rm, lounge	471	5,064
Total Net Area Program Requirements	3,088	33,237
Net Area to be located in New Addition	2,485	26,747
Gross Area to be located in New Addition (gross-up factor of 1.65)	4,100	44,130

Site

The proposed site for the Beaty Biodiversity Centre Addition is to the south of the existing building, in open space between the existing south wing and the CEME Laboratories Building (Refer to Appendix 1 – Context Map of Location). This site was identified as the most appropriate for an addition in a 2019 feasibility study. Although the site size is challenging, it is sufficient for the proposed program and there are multiple options for connection into the existing building. The site has the added advantage of leaving intact the primary building form and open space quadrangle to the north. The site was recommended by the New Building Site Selection Committee on November 16, 2020, and endorsed by the Property & Planning Advisory Committee + Senate Academic Building Needs Committee on December 15, 2020.

Preliminary Capital and Operating Budgets

UBC Properties Trust has estimated the capital budget for the project at \$40 million, including an allowance for integration of the Addition and the existing building.

Annual operation costs will be calculated at the standard rate (\$8.60/gsf/year for new buildings) and paid by the Faculty of Science. Lifecycle capital costs will be funded by the UBC operating budget and Provincial government through the Routine Capital Program. Detailed breakdowns of the preliminary Capital Budget and Operation Costs are shown in *Appendix 2 Preliminary Capital Budget and Operations and Maintenance Costs*.

Funding Sources and Financing

UBC Development & Alumni Engagement has confirmed \$20 million in donor funding for the project. These gifts are matched by \$20 million university matching funds through the Academic Capital Fund (ACF), which was approved by the Executive in February 2020. The latter funding will be financed through a 30-year internal loan at 5.75% (payments would be about \$1,400,575 per annum, from the ACF). The schedule for receipt of the donors' payments aligns with budget releases for the project following Board approvals.

Funding Source	Amount
Donor Funding	\$20,000,000
Academic Capital Fund	\$20,000,000
Total Funding	\$40,000,000

Sustainability targets

The Addition project team will investigate if LEED Gold certification is feasible for a project of this type. Regardless of that outcome, the team will work towards defined energy performance targets as per UBC requirements and look for meaningful sustainability targets that work for the project type.

Risks

- Construction-related disruption will require some swing space for building occupants. A swing space plan is being developed with Facilities Planning that is based on an assumed level of disruption.
- An experienced and creative design team is critical for developing a project which successfully negotiates the tight site, impact to the existing building form and proximity to existing buildings and trees.
- Current market conditions are uncertain due to COVID-19. An escalation contingency of 7.0% has been included in the cost estimate to reflect this risk.
- There are always unknown risks tying into an existing building. Design and construction contingencies of 5.0% are included in the cost estimate to reflect this risk.

Preliminary Schedule

MILESTONE	TARGET DATE
Executive 1	January 2020
New Building Site Selection Committee	November 2020
PPAC ¹	December 2020
Executive 2+3	February 2021
Board 1	April 2021
Board 2	February 2022
Board 3	December 2022
Construction Start	January 2023
Construction Completion	October 2024
Occupancy	November 2024
Board 4	December 2026

1 Property & Planning Advisory Committee + Senate Academic Building Needs Committee

APPENDICES

1. Context Location Map
2. Preliminary Capital Budget and Operations and Maintenance Costs

PRESENTATIONS

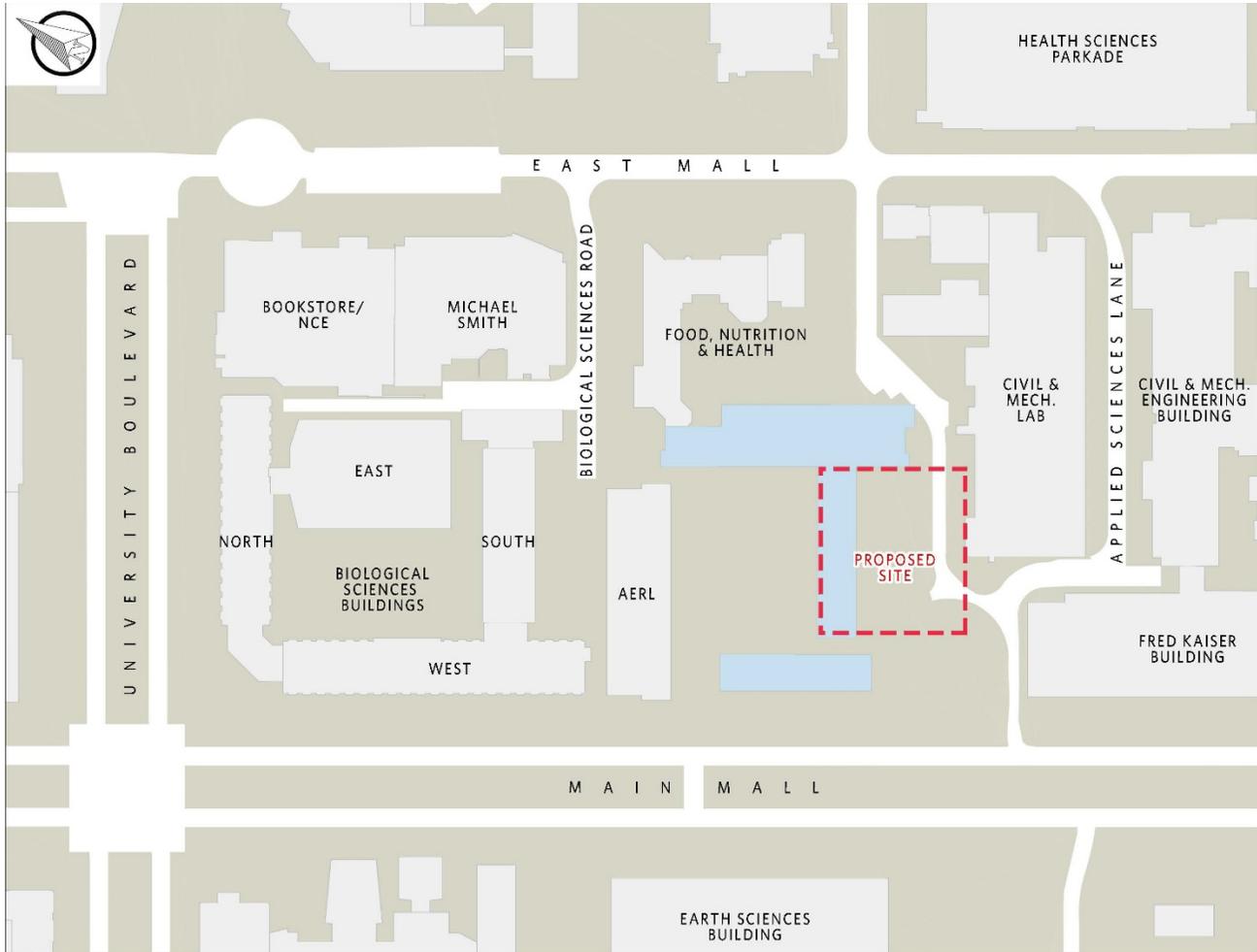
1. Beaty Biodiversity Centre Addition Board 1 Approval

SUPPLEMENTAL MATERIALS (optional reading for Governors)

1. Beaty Biodiversity Centre Constituents - Information

Appendix 1 – Context Location Map

Note: Proposed site boundaries include the existing Beaty Biodiversity Centre south wing in recognition that there will be some impact at the addition/existing building connection. Southern site boundary is intended to permit the design team to explore potential below-grade extension under the east-west pedestrian/fire lane.



Appendix 2 - Preliminary Capital Budget and Operation Costs

Preliminary Capital Budget

UBC Properties Trust has provided the following project cost estimate for the Beaty Biodiversity Centre Addition. This is a class D estimate with an accuracy of +/-30%.

Project Capital Cost Breakdown		\$	\$/gsf
Construction Costs			
	Construction (LEC)	26,124,960	592
	Beaty Integration Factor	600,000	
	Public Realm	400,000	
	Service Requests to UBC Facilities	150,000	
	Service Relocation	350,000	
	Contingency	1,700,000	
	Total Construction	29,324,960	
Cash Allowances			
	FF+E	1,200,000	
	UBC IT	450,000	
	Secure Access/Signage/Moving	235,000	
	Audio Visual ¹	400,000	
	Total Cash Allowances	2,285,000	52
Soft Costs			
	Consultants	3,519,000	
	IIC's	0	
	Preconstruction/Permits (incl Metro Van & Translink)	615,000	
	Total Soft Costs	4,134,000	94
	Building Subtotal	35,743,960	
	Project Management	1,430,000	
Building Total		37,173,960	842
	Construction Period Financing ²	230,000	
	Retained Risk	400,000	
	Escalation	1,500,000	
	GST	696,040	
TOTAL PROJECT		40,000,000	906

Area (gross square feet)		44,130
Cost Per Square Foot		\$906

¹To be verified by UBC AV

²Provided by UBC Treasury

Operations and Maintenance Cost

Annual operations and maintenance costs will be calculated at the standard rate (\$8.60/gsf/year for new buildings) and paid by the Faculty of Science. Lifecycle capital costs will be funded by the UBC operating budget and Provincial government through the Routine Capital Program.

Beaty Biodiversity Centre Addition	\$/gsf	Faculty of Science
Total Gross Area		44,130
OPERATIONS AND MAINTENANCE COSTS¹		
Annual Operations + Maintenance	\$6.37	\$281,108
Utilities	\$2.23	\$98,410
Total O+M Cost	\$8.60	\$379,518
LIFECYCLE CAPITAL COSTS		
Cyclical Maintenance	\$3.51	\$154,896
Modernization / Upgrade	\$0.93	\$41,041
Total Capital Renewal Cost	\$4.44	\$195,937

- 1 Final costs will be based on actual built areas and are subject to change pending final design and construction.



Beatty Biodiversity Centre Addition Board 1 Approval Request

April 7, 2021

John Metras, Associate Vice-President Facilities



Introduction and summary



Proposed Beaty Biodiversity Centre Addition will:

- House 10 PAEI-supported faculty & teams
- Support growth of Biodiversity Research Centre's world-recognized research
- Provide additional space for Beaty Biodiversity Museum

Additional details



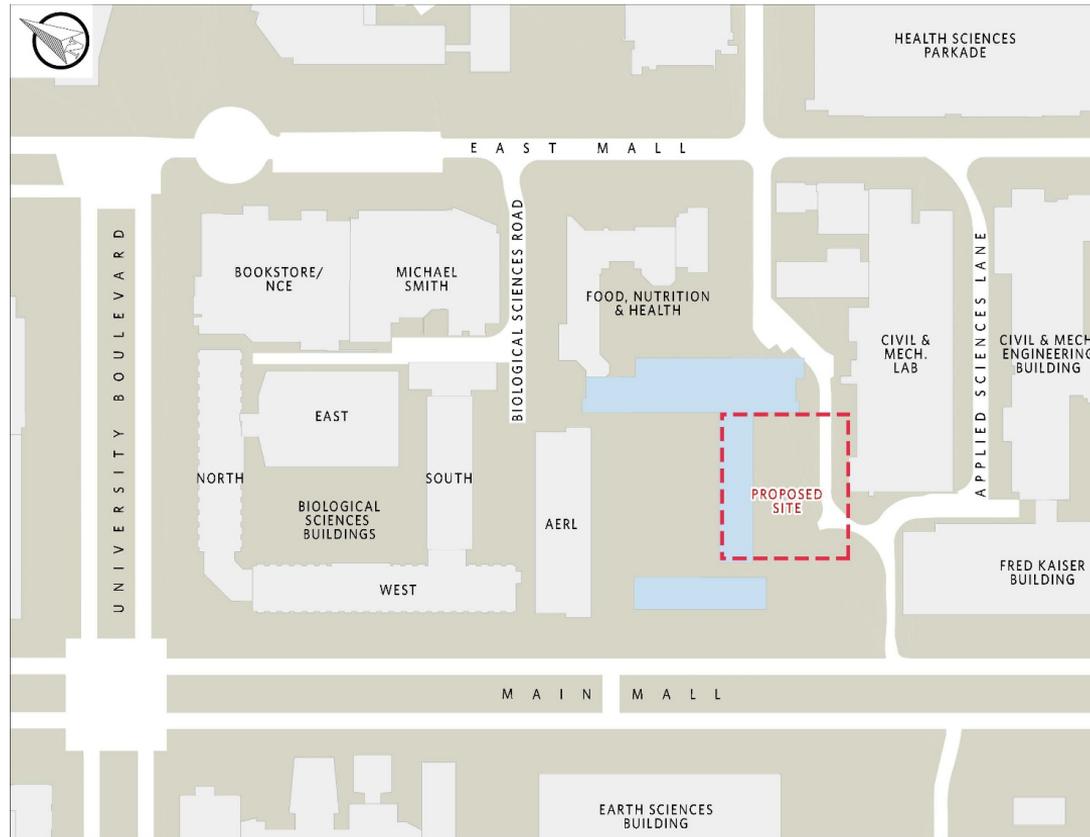
- Addition will add 4,100 m² (44,116 ft²) to existing Beaty Biodiversity Centre
- Includes dry labs & support facilities for world-leading research, and office space for new faculty
- Space for Museum includes fossil repository

Additional details



- Capital cost estimate is \$40.0 million
- Funding from Academic Capital Fund and confirmed donors
- Site boundary is larger than addition will be but supports design team optimizing site

Additional details – Site Map



Discussion and decision points



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- iv. preliminary capital budget of \$40,000,000 and operating costs as set out in the Appendices to the briefing;**
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Supplemental Materials 1 – Beaty Biodiversity Centre Constituents - Information

Biodiversity Research Centre: An Emerging Global Research Priority

From climate change and ocean acidification to deforestation and overfishing, humans are changing the world at a faster pace than any other species in the history of our planet. How can we maintain productivity in agriculture, forests and fisheries, and secure food supplies for the future? Which species will be able to adapt to change, and which will go extinct? How can we predict and monitor the rate of current and future change in our ecosystems? Answers to these questions require an integrated approach to understanding biodiversity in wild and managed environments, one that considers mechanisms from single genes through to entire ecosystems. The BRC at UBC is one of the world's strongest groups seeking answers to these questions. Uniting scientists working on different systems, and with different perspectives and expertise, offers the best hope for solutions to large-scale problems such as the biodiversity crisis. UBC is poised to be the top university internationally for research and graduate training in biodiversity research. Expansion of the Beaty Biodiversity Centre would be a potential game changer for biodiversity research at UBC, both for addressing the global imperative of understanding and conserving biodiversity and for achieving international leadership in this research area.

The proposed Beaty Biodiversity Centre expansion will provide:

- Offices, theory rooms, and meeting rooms to accommodate 15-18 new faculty and growing teams who are currently space constrained;
- Storage for field equipment and specimens that are currently housed elsewhere.

Conservation Science Initiative

Research conducted in the facility combines excellence on many fronts. One of the most exciting fronts involves co-operative projects with NGOs, government agencies, and foundations that have interests and expertise in biodiversity conservation. A number of BRC faculty are cross-appointed with government agencies, and the BRC recently launched a Conservation Science Initiative, headed by new President's Excellence Chair in Biodiversity, Claire Kremen, to develop and extend partnerships with conservation organizations.

UBC and the BRC are well positioned to become a research hub for biodiversity conservation organizations in BC. Day-to-day interactions between academics and biodiversity conservation leaders in business, government and NGOs can result in remarkable synergies. Partnerships with conservation organizations provide an increasingly important means for bringing the most pressing conservation questions into the BRC research labs and for translating the research into solutions for the real world at both local and global scales.

The proposed Beaty Biodiversity Centre expansion will provide space for the Conservation Science Initiative including:

- Shared Biodiversity Data Science Lab that would put large-scale biodiversity/environmental/geospatial data sets and computational tools into the hands of biodiversity scientists and conservation organizations; and
- Touch-down offices and shared meeting space for conservation organizations, with the goal of creating a biodiversity conservation hub in the heart of the UBC campus.

Beaty Biodiversity Museum

In addition to the Biodiversity Research Centre, the Beaty Biodiversity Centre houses Vancouver's only natural history museum, dedicated to enhancing the general public's appreciation of biodiversity. The Museum houses a collection of more than two million specimens, some dating back to as early as the 1910s. It receives roughly 40,000 visitors annually, including 3,300 undergraduate and graduate students and 6,200 children via school groups. The Museum is a core contributor to UBC's research mission, focusing on collections-based research and conservation. It is also a leader in the use of biological collections in public outreach and education and communicates the excitement and value of the biodiversity science conducted by researchers in the BRC. The popularity of the Museum, however, was unexpected and outreach and education staff and volunteers have

outgrown the space assigned to them. In addition, there is limited capacity for specimen digitization or for accommodating new natural history collections and new exhibits.

The proposed Beaty Biodiversity Centre expansion will provide:

- Office and meeting rooms for outreach/education staff and volunteers;
- Labs for exhibit development and digitization;
- Space for collection expansion, including a possible Province of BC fossil repository; and
- Space for new exhibits, especially ‘conservation stories’ that would be developed jointly with the Conservation Science Initiative.