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THE UNIVERSITY OF BRITISH COLUMBIA

**REPORT TO THE BOARD OF GOVERNORS**

**SUBJECT UNDERGRADUATE LIFE SCIENCES TEACHING LABS  
RENEWAL**

**MEETING DATE April 14, 2014**

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

**APPROVED FOR  
SUBMISSION**

**David H. Farrar**  
Acting President and Vice-Chancellor

**Presented By** David Farrar, Provost & Vice-President Academic  
Pierre Ouillet, Vice-President Finance, Resources & Operations  
Simon Peacock, Dean, Faculty of Science  
Gavin Stuart, Vice-Provost Health and Dean, Faculty of Medicine  
John Metras, Managing Director, Infrastructure Development  
Michael White, Associate Vice-President, Campus & Community Planning  
Peter Smailes, Treasurer  
Al Poettcker, President & CEO, UBC Properties Trust

**Report Date** March 20, 2014

**DECISION REQUESTED** **IT IS HEREBY REQUESTED that the UBC Board of Governors approve BOARD 1 for Undergraduate Life Sciences Teaching Labs Renewal, with a funding release of \$1,500,000 to commence design.**

Preliminary Capital Budget	\$80,000,000
Preliminary Operating Budget	\$ 1,503,000
Schedule	
Project in Principle	
Location	
Consultant Selection	
Program	
Proceed to Schematic Design	
<b>Funding Release</b>	<b>\$1,500,000</b>

**Information**  
Expenses to Date \$0

## EXECUTIVE SUMMARY

The Undergraduate Life Sciences Teaching Labs Renewal project involves an \$80 million renewal and expansion of the Biological Sciences complex to provide modern, well equipped teaching laboratories for over 2,000 students enrolled in undergraduate life sciences programs. This will replace and consolidate deteriorated teaching labs in the Biological Sciences Centre and North, Wesbrook and D.H. Copp buildings. **The project will also address seismic risk associated with these buildings, which have all been rated high or very high risk, and ultimately result in the elimination of up to \$85M in deferred maintenance.**

A functional program has been completed and aligned with the proposed project budget.

Funding is proposed to be contributed from three sources:

- 1) Pending Treasury Board Approval, the Ministry of Advanced Education has approved in principle a contribution (\$21.25 million) toward the renewal portion of the project.
- 2) An internal loan (\$21.25 million) repaid from the Central Operating Budget supported by expected Vantage College revenue. The project is required in part to support the additional services for expanded enrolment to which Vantage College will materially contribute. The Vantage College operating budget includes an annual allocation to specifically support debt financing for the Undergraduate Life Sciences Teaching Labs project.
- 3) An internal loan (\$37.5 million) repaid from the Trek Endowment using the 3.5% annual spending allocation attributable to \$57.3 million in incremental endowed land development revenue made possible in part by this project. This land development revenue would be generated by shifting two rental University Housing projects (for those who work at or attend UBC) from Wesbrook Place to Academic lands on University Boulevard - the current General Services & Administration Building (GSAB) and D.H. Copp building sites. GSAB tenants are currently being relocated as part of a previously planned project to the Gerald McGavin, Donald Rix and Technology Enterprise Facility 3 buildings making the site available for development any time after July 2014. D.H. Copp uses would be shifted to the renewed and expanded Biological Sciences complex after its targeted completion in July 2017 thus making the D.H. Copp site available for development. Shifting the rental projects from Wesbrook Place to these sites on University Boulevard would free up Market Leasehold gross buildable area in Wesbrook Place that would consequently generate \$57.3 million in prepaid lease revenue for endowment. The annual 3.5% endowment spending allocation on this amount will support debt service for a \$37.5 million loan for the Undergraduate Life Sciences Teaching Labs (Biological Sciences Renew) project. A schematic showing the flow of funds is provided in Attachment 3.

This represents a creative opportunity to develop a vibrant mixed-use community at the gateway to campus, with ground level Academic/Campus as a Living Lab program uses and needed rental University Housing on University Boulevard, while at the same time supporting a much needed infrastructure renewal project impacting thousands of students. The development of the mix-use community allows the University to deliver the University Boulevard housing and retail vibrancy envisaged in the original campus plan, before a later reallocation of land to the new SUB, Alumni Centre and expanded transit terminal. **In that context, the transfer of sites to University housing, although compliant with the Land Use Plan, is truly exceptional in nature.**

Campus & Community Planning (C&CP), in consultation with UBC counsel, has reviewed the proposed projects on the GSAB and D.H. Copp sites and determined that the mixed-use/Campus as a Living Lab approach is consistent with the *Land Use Plan* and *Vancouver Campus Plan*.

This Board 1 approval request is specifically for the Undergraduate Life Science Teaching project, including the proposed funding model. The project is currently ranked as priority 1B in the UBC Capital Plan and received Executive 3 approval on December 16, 2013. **Separate Board approvals will be sought at the appropriate time for the proposed rental University Housing projects on University Boulevard.**

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**Place and Promise COMMITMENT(s)** The University provides the opportunity for transformative student learning through outstanding teaching and research, enriched educational experiences, and rewarding campus life.

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**Place and Promise ACTION(s)** Foster UBC's globally influential areas of research excellence.  
Develop new global centres of excellence at UBC with international partners.  
Enhance infrastructure to support leading edge research.

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**Description & Background and Academic Need**

**Rationale** UBC delivers life sciences teaching programs to more than 2,000 FTE students, preparing students for further study or a career in the life sciences sector. Laboratory experiences are essential to learning, providing hands-on opportunities to explore practical problems and conduct research.

Life sciences teaching programs are currently delivered in deteriorating buildings that are 1960-70's era or older and represent significant seismic risk. Original lab configuration and infrastructure hampers the ability of instructors to develop progressive teaching methods centered on student collaboration. Teaching lab sizes limit the ability of programs to respond to increased student demand for placement. Building finishes and systems are beyond or nearing the end of their serviceable life and renovation of individual labs is limited by the inability to improve overall deteriorating building infrastructure.

The proposed project will provide modern, well equipped laboratories and a consolidated home for undergraduate students and teaching faculty in the following programs:

- Faculty of Science: Biology, delivered by Botany and Zoology, currently located in Biological Sciences North Wing and Centre Block
- Faculty of Science: Microbiology & Immunology (M&I), currently located in the Wesbrook Building
- Faculty of Medicine: Biochemistry & Molecular Biology (B&MB), and Cellular and Physiological Sciences (CAPS), currently located in the D.H. Copp Building

**Project Description**

The project will renew and add a 4th floor to Biological Sciences North Wing (built 1976), create a 4-storey link between Biological Sciences West and North, and replace the deteriorated Biological Sciences Centre Block (built 1948) and 2-storey Workshop Building with a new 5-storey addition on the east side of the courtyard. A project site plan is provided in Attachment 2. Total project area, including rooftop research and teaching greenhouse space, is 174,795 gross square feet. The project builds on the successful renewal of the Biological Sciences West and South Wings completed in 2011 as part of the Knowledge Infrastructure Program funded by the Federal and Provincial governments.

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Demolishing Biological Sciences Centre and renewing Biological Sciences North will reduce deferred maintenance by \$45M and significantly reduce structural seismic risks. Teaching programs in Copp and Wesbrook are the primary functions remaining in those buildings, and relocating the programs paves the way for future demolition and an additional deferred maintenance reduction of \$40M. Demolition of Copp following completion of the project will create a major building site to be used for rental University Housing (for those who work at or attend UBC), the proceeds of which will help fund the Biological Sciences renewal project.

In the short-term, relatively low cost seismic, functional and life safety upgrades to Wesbrook and minor safety upgrades to Copp will allow these facilities to be used for swing space to facilitate the Undergraduate Life Sciences Teaching Lab renewal and then potentially the planned Undergraduate Chemistry Teaching Lab renewal project.

### **Functional Program**

Resource Planning Group (RPG) was retained to develop a functional program for the project. Total new and renewed building area is approximately 15,408 gross square metres (165,840sf) plus 832 gross square metres (8,956sf) of rooftop research and teaching greenhouse space, for a total of 16,240 gross square metres (174,795sf). The project will include:

- Teaching laboratories for Biology, M&I, B&MB, and CAPS
  - Teaching lab support, including preparation rooms, environment chambers, and plant and specimen collections
  - Instructors' offices and administrative support
  - Student help centre, informal learning space, and student association offices
  - Faculty of Science Co-op for life sciences programs (currently in Copp)
  - Replacement lecture theatres and classrooms
  - Replacement and upgrade of Biological Science complex functions currently in North Wing and Centre Block, including Botany administration hub, post-doctoral and graduate student offices, the BioImaging Facility, research greenhouse and growth chambers, loading/receiving, central stores, workshops, aquatics research and hummingbird lab.
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## Functional Program Summary

Component	Space Requirements Net Square Metres (NSM) by Category (Yr 2015/16)							Total NSM	BGSM <sup>1</sup>
	1.0 Class-rooms	2.0 Teaching Labs UGrad	3.0 Research Labs	4.0 Academic & Admin Offices & Related Support	14.0 Common Use & Student Activity	16.0 Non-Assign-able	18.0 Aquatics and Plants		
A1. Classrooms, BioSciences Resource Centre, Informal Learning	1,566.8	-	-	-	440.7	-	-	2,007.5	
B1 Biology Program Teaching Labs, Teaching Offices	-	3,126.2	-	413.5	10.1	-	-	3,549.8	
B2 Microbiology & Immunology Teaching Labs, Teaching Offices	-	729.0	-	110.0	24.4	-	-	863.4	
B3 Biochemistry & Molecular Biology Teaching Labs, Teaching Offices	-	449.0	-	66.9	-	-	-	515.9	
B4 Cellular & Physiological Sciences Teaching Labs, Teaching Offices	-	305.7	-	66.0	-	-	-	371.7	
B5 Shared Teaching Labs Support	-	70.5	-	-	-	-	-	70.5	
C1 Aquatics Research Additional Functions	-	-	-	-	-	-	210.0	210.0	
C2 Hummingbird Behaviour Lab	-	-	45.0	-	-	-	-	45.0	
C3 Botany Centralized Growth Chambers	-	-	-	-	-	-	280.4	280.4	
C5 Biolmaging Facility EM Suite	-	-	196.9	11.0	-	-	-	207.9	
C6 Shops	-	-	302.8	43.0	-	-	-	345.8	
C7 Receiving & Building Services, Central Stores	-	75.4	61.4	11.0	-	-	-	147.8	
D1 Other Offices and Shared Office Support (Botany, Zoology)	-	-	-	538.5	-	-	-	538.5	
D2 Shared Office Support	-	-	-	187.5	-	-	-	187.5	
D3 Life Sciences Co-op	-	-	-	63.7	-	-	-	63.7	
E1 Building Support	-	-	-	-	-	135.0	-	135.0	
<b>Subtotal Net Square Metres</b>	<b>1,566.8</b>	<b>4,755.8</b>	<b>606.1</b>	<b>1,511.1</b>	<b>475.2</b>	<b>135.0</b>	<b>490.4</b>	<b>9,540.4</b>	
Building Gross-up									
<b>Subtotal BGSM @1.615 Factor x NSM</b> Factor based on combined Renew/New project									<b>15,408</b>
C4 Rooftop Botany Greenhouses	-	-	-	-	-	-	693.3	693.3	
Subtotal	-	-	-	-	-	-	693.3	693.3	
<b>Subtotal BGSM @1.20 Factor x NSM</b>									<b>832</b>
<b>TOTAL BGSM</b>									<b>16,240</b>

<sup>1</sup> BGSM = Building Gross Square Metres

**COSTS**  
Capital &  
Lifecycle Operating

**CAPITAL COST BUDGET**

The following budget was prepared by UBC Project Services.

	<b>Totals</b>	
		Cost/sf
<b>Construction Costs</b>		72%
Construction	\$ 51,823,824	\$ 296
Design/Construction Contingency	\$ 1,785,186	
Construction Management	\$ 2,072,953	
<b>Cash Allowances</b>		14%
Public Realm	\$ 1,000,000	
Site Servicing	\$ 950,000	
Demolition	\$ 683,345	
Escalation	\$ -	
Kitchen Equipment	\$ -	
FF+E	\$ 3,750,000	
UBC IT and Secure Access	\$ 1,000,000	
Audio Visual	\$ 1,000,000	
Swing Space Cash	\$ 2,500,000	
<b>Soft Costs</b>		10%
Consultant Budget	\$ 5,182,382	
Moving / Commission / Inspection	\$ 829,181	
IIC, Permits, PO Charges, Insurance & Legal	\$ 525,000	
Project Management	\$ 1,462,037	
<b>Building Subtotal</b>	\$ 74,563,909	\$ 427
GST	\$ 1,230,305	
<b>Project Subtotal</b>	\$ 75,794,214	\$ 434
Retained Risk	\$ 445,792	
UBC Finance Charges	\$ 1,179,994	
<b>SUBTOTAL</b>	\$ 77,420,000	\$ 443
<b>ADDITIONAL WESBROOK UPGRADES</b>		
- Seismic Upgrade	\$ 1,000,000	
- Lab safety upgrades	\$ 1,050,000	
- Lecture theatre upgrade	\$ 530,000	
<b>PROJECT BUDGET</b>	\$ 80,000,000	\$ 458

**OPERATING BUDGET**

<b>Operating Costs</b>	Annual \$	\$/GSF
Annual Operations + Maintenance	\$1,113,444	\$6.37
Utilities	\$389,793	\$2.23
<b>Total O + M Cost</b>	\$ 1,503,237	\$ 8.60
Less: Savings from Demolished Space*	\$ 474,931	\$ 5.67
<b>Net O&amp;M Cost</b>	\$ 1,028,306	
<b>Lifecycle Capital Costs</b>	Annual \$	\$/GSF
Cyclical Maintenance	\$613,530	\$3.51
Modernization / Upgrade	\$162,559	\$0.93
<b>Total Capital Renewal Cost</b>	\$776,090	\$4.44

\*\*DEMOLITIONS: Bio Ctr 59,695 GSF; Bio North Rooftop Greenhouses 4240 GSF; Bio North Rooftop Mech PH 2960 GSF; 3rd flr bridge between BioSci N&W 2196GSF; BioSouth Spoke 6738GSF; Workshop 7642GSF, Paper Recyc/Flamm Stor 291GSF TOTAL DEMOLISHED SPACE 83,762 GSF (7782 GSM)

Faculties of Science and Medicine will pay annual net O&M cost for their respective space. Central Operating budget will fund Capital Renewal requirements to the extent possible.

**FINANCIAL**

Funding Sources,  
Impact on Debt Ratios

**Preliminary Funding Plan**

The Undergraduate Life Sciences Teaching Labs project was included as the top priority in the last UBC Five-Year Capital Plan submission to the Provincial Government. This Plan proposed that funding for the project be split 50/50 between the Provincial Government and UBC. The Province has indicated that it has approved in principle the renewal portion of the project only, estimating its cost to be in the range of \$42.5 million. Pending Treasury Board approval, the Province would contribute \$21.25 million toward this renewal component. The following funding plan is therefore proposed, including UBC internal sources for the balance of the project funding.

Funding Source	
<b>Provincial Government</b> – Pending Treasury Board approval, the Ministry of Advanced Education has approved in principle a contribution toward the renewal portion of the project.	\$21,250,000
<b>Central Operating Budget</b> - Internal loan (30 years, 5.75%) repaid from Central Operating Budget supported by expected Vantage College revenue. The project is required in part to support the additional services for expanded enrolment to which Vantage College will materially contribute. Vantage operating budget includes a sufficient annual allocation to specifically support this debt financing for the Undergraduate Life Sciences Teaching Labs project.	\$21,250,000
<b>Trek Endowment</b> – Internal loan (35 years, 5.75%) repaid from Trek Endowment using 3.5% annual spending allocation attributable to the \$57.3 million endowed land development revenue made possible by this project. Details noted below.	\$37,500,000
<b>Total Funding</b>	<b>\$80,000,000</b>

The \$57.3 million endowed land development revenue would be generated by shifting two rental University Housing projects (for those who work at or attend UBC) from Wesbrook Place to Academic lands on University Boulevard – the current General Services & Administration Building (GSAB) and D.H. Copp building sites. Shifting these rental projects would free up 301,500 ft<sup>2</sup> (132,700 ft<sup>2</sup> plus 168,800 ft<sup>2</sup>) of Market Leasehold gross buildable area in Wesbrook Place that would consequently generate \$57.3 million in prepaid lease revenue (\$190/ft<sup>2</sup> net of servicing and IICs) for endowment. The annual 3.5% endowment spending allocation on this amount will support debt service for a \$37.5 million loan amortized over 35 years at 5.75%. A schematic showing the funds flow is provided in Attachment 3.

GSAB tenants are currently being relocated to available office space in the Gerald McGavin, Donald Rix and Technology Enterprise Facility 3 buildings. This is part of a proactive strategy to address seismic risk, deferred maintenance and inadequacy of the building for current requirements. Demolition of GSAB could take place at any time after July 2014. D.H. Copp uses would be shifted to the renewed and expanded Biological Sciences complex after its targeted completion in July 2017 thus making the D.H. Copp site available for development. Both GSAB and D.H. Copp have been assessed as very

high risk for structural failure in the event of a seismic event and therefore their demolition represents a net benefit to the University from a risk management perspective.

The current UBC liquidity plan includes the required internal financing for this project, which is a Priority 1B on the internal capital priorities list. An assessment will be made prior to Board 3 to determine whether sufficient liquidity is available for the project to proceed on the proposed schedule.

### **UBCPT Financial Analysis of Proposed Land Use Change to GSAB and D.H. Copp Building Sites**

The following value to UBC would be generated by shifting rental University Housing projects from Wesbrook Place to Academic lands on University Boulevard:

#### GSAB Site:

Site Area	47,400 ft <sup>2</sup> (4,400 m <sup>2</sup> )
Assumed built form	6-storey wood frame
Assumed FSR	2.8
Rental GBA	132,700 ft <sup>2</sup>

#### Copp Site:

Site Area	60,300 ft <sup>2</sup> (5,600 m <sup>2</sup> )
Assumed built form	6-storey wood frame
Assumed FSR	2.8
Rental GBA	168,800 ft <sup>2</sup>

#### Benefit to Wesbrook Place:

Shifting these rental projects would free up 301,500 ft<sup>2</sup> (132,700 ft<sup>2</sup> plus 168,800 ft<sup>2</sup>) of Market Leasehold gross buildable area (GBA)

Consequently, 301,500 ft<sup>2</sup> of wood-frame GBA in Wesbrook Place would return to UBC:

- **\$57.3 million in prepaid lease revenue (\$190/ft<sup>2</sup> net of servicing and IICs)**
- \$7.5 million in IIC (infrastructure impact charges) revenue (net increase market rate over rate for rental University Housing)
- \$8.0 million in the cost of servicing that could be applied to University Boulevard
- \$1.0 million in CAC (community amenity charges) revenue

Total return to UBC **\$73.8 million**

Once built, the new wood frame rental projects would generate Appraisal Surplus values of approximately **\$33 million to \$38 million** (\$110 to \$125/ft<sup>2</sup>).

The \$57.3 million pre-paid lease revenue would be endowed and the associated increase in annual endowment spending be used to support financing for Undergraduate Life Sciences Teaching Labs project.



**SCHEDULE Preliminary Implementation Schedule**

Implementation Timeline The project is targeting completion in June 2017. This will allow time for set-up of teaching labs prior to the start of the 2017/18 academic year.

UBC Board 1	April 2014
Treasury Board Approval of Provincial Funding Contribution	Fall 2014
UBC Board 2	December 2014
UBC Board 3	June 2015
Construction Start	July 2015
Substantial Completion	June 2017
Final Occupancy	July 2017
Board 4	June 2019

**RISKS Project Risks**

Financial, Operational & Reputational The primary risk for the project is that the Land Development and Vantage College revenues required for project funding are not realized in the expected timeframe. This would create a funding shortfall requiring other projects supported by the Central Operating Budget to be potentially deferred. UBC Properties Trust has confirmed the potential land development revenue for the market housing development based on extensive experience and track record with similar developments on campus. Vantage College confirms that application numbers are in line with expectations and that they are on track to meet initial year enrolment targets.

**BENEFITS** Benefits of the proposed project include:

Learning, Research,  
Financial,  
Sustainability &  
Reputational

- Provides modern teaching labs for 2,000+ students in life sciences program.
- Addresses seismic risk in four high or very high risk buildings
- Eliminates up to \$85 million in deferred maintenance
- Provides rental University Housing for those who work at or attend UBC

**CONSULTATION**

Relevant Units,  
Internal & External  
Constituencies

The project is currently ranked as priority 1B in the UBC Capital Plan and is a priority for the Faculties of Science and Medicine. Infrastructure Development - Facilities Planning has worked with the user group to develop the functional program and a swing space plan, and UBC Project Services has provided preliminary budget costing based on the program. Campus & Community Planning (C&CP) has provided input on off-site utilities, sustainability objectives, siting, and integration with the Public Realm. UBC Utilities has provided a preliminary assessment of utilities requiring relocation. C&CP has determined that this project does not require submission to the New Building Site Selection Committee as it involves rebuilding on an existing built site. The project received the support of the Property & Planning Advisory Committee (PPAC) on September 17, 2013.

A Request for Expressions of Interest from architects has been completed and the following short-list of qualified design consultants is recommended:

- Acton Ostry Architects
- B+H Architects
- Diamond Schmitt/CEI Architecture

The project manager, in consultation with the University Architect, Faculties of Science and Medicine and Infrastructure Development, will select the prime design consultant from this shortlist based on detailed proposals.

The project will be managed by UBC Project Services (Infrastructure Development). Project Services managed the successful renewal of Biological Sciences West + South which was completed on time and under budget in 2011.

Following Board 1 approval and the selection of the project architects, the development review process will include reviews by the Advisory Urban Design Panel and the Development Review Committee. A public open house will be held prior to the Board 2 report to the Board of Governors scheduled for November 2014.

### **Campus & Community Planning Review**

Campus and Community Planning, in consultation with UBC counsel, have analyzed the land use implications of the proposed rental University Housing on the GSAB and D.H. Copp sites. Both sites are designated 'Academic' in the *Land Use Plan*. This allows a range of development uses to support UBC's academic mission. The proposed projects fit the academic designation as demonstration campus-as-a-living-lab projects. Staff have structured the project proforma to contribute Infrastructure Impact Charges from the associated Wesbrook Place land development towards this goal and have begun to explore research partnerships with a number of academic sponsors.

A possible vision for the two sites is as follows:

#### **GSAB Site – UBC Athletics Focus**

- Highlighting UBC's high performance sports and health and wellness initiatives, and serving as a portal to the surrounding athletics facilities.
- Providing ground-floor academic uses such as high performance sport research labs, recovery facilities and retail, while integrating with surrounding uses such as transit.
- Offering much needed upper-floor rental University Housing (for those who work at or attend UBC) with priority access for varsity athletes, coaches and Kinesiology faculty.

#### **D.H. Copp Site – Social Sustainability Focus**

- Serving as a Campus as a Living Lab project for research investigating community living in a dense urban setting. Early identification of potential partnerships includes the School of Population and Public Health.
- Providing ground-floor academic and retail uses to integrate with existing and planned University Boulevard developments.
- Offering upper-floor rental University Housing exploring innovation in higher density living, such as:

- Integrated indoor/outdoor common areas;
- Enhanced design for accessibility / persons with disabilities;
- Increased functional landscaping / urban agriculture;
- Innovation in unit design (flexible and multi-functional spaces);
- Building systems monitoring and feedback loops to inhabitants;
- Healthy and low environmental impact materials;
- Passive building design to reduce energy needs;
- Shared amenities for inhabitants;
- Integrated design process with end users.

The opportunity to build mixed-use academic and University Housing on these sites also contributes to UBC's long-term vision for University Boulevard as a vibrant complete community. As the campus gateway, the GSAB site in particular offers the opportunity to enhance UBC's 'front door' with a welcoming university arrival experience.

C+CP has also confirmed that conversion of the GSAB and D.H. Copp sites to include University Housing would not undermine UBC's supply of land for teaching and research. The *Vancouver Campus Plan* identifies the GSAB site for administrative use; this use has already been shifted to existing administrative buildings. D.H. Copp and neighbouring buildings are identified as redevelopment sites. With completion of the undergraduate teaching laboratories, academic uses in D.H. Copp will be shifted to the newly-expanded Biological Sciences complex. In the long-term, the sites' redevelopment could result in more efficient academic uses in neighbouring buildings.

Building University Housing on the GSAB and D.H. Copp sites would contribute to UBC's Housing Action Plan targets and count as part of the *Land Use Plan* requirement that 20% of new residential units be rental housing. This would reduce the demand for rental housing in the Wesbrook Place neighbourhood and allow additional market leasehold development.

The detailed vision for these sites will be developed through consultation with the campus community, recognizing that proposed redevelopment of these sites to include University Housing will likely generate debate. In the past, concerns have been raised by some students with proposals for faculty and staff housing south of Gage Towers. C+CP will seek to understand and manage such concerns through a meaningful community engagement process that:

- involves early communication with key stakeholders, technical analysis of project impacts, and comprehensive public consultation prior to and following the development permit process;
- communicates the intent for using the sites for Campus as a Living Lab projects that integrate University Housing, an athletics portal, social sustainability, and various academic services; engages the community on how best to activate the sites and ensure compatibility and integration with the surrounding area and uses.

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**UBCPT COMMENTS**

Date of Review:

Signed Off by:

Complete for all reports that include a property component

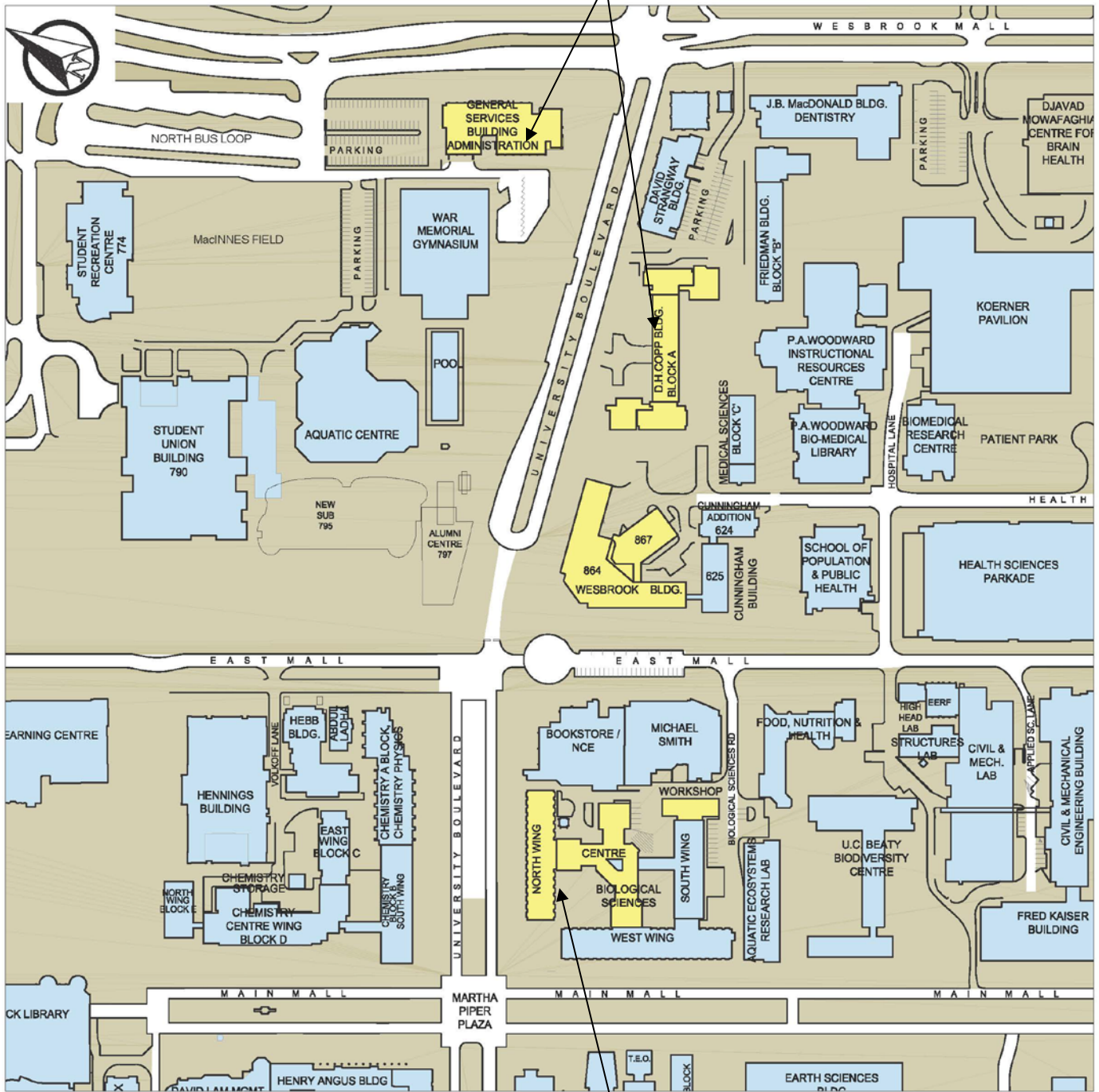
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**Attachments**

- 1) Context Map with Relevant Buildings
- 2) Biological Sciences North & Centre Project Site
- 3) Land Development Funding Model - Flow of Funds
- 4) Capital Project Accountability Scope & Planning
- 5) Capital Project Accountability Budget & Financing

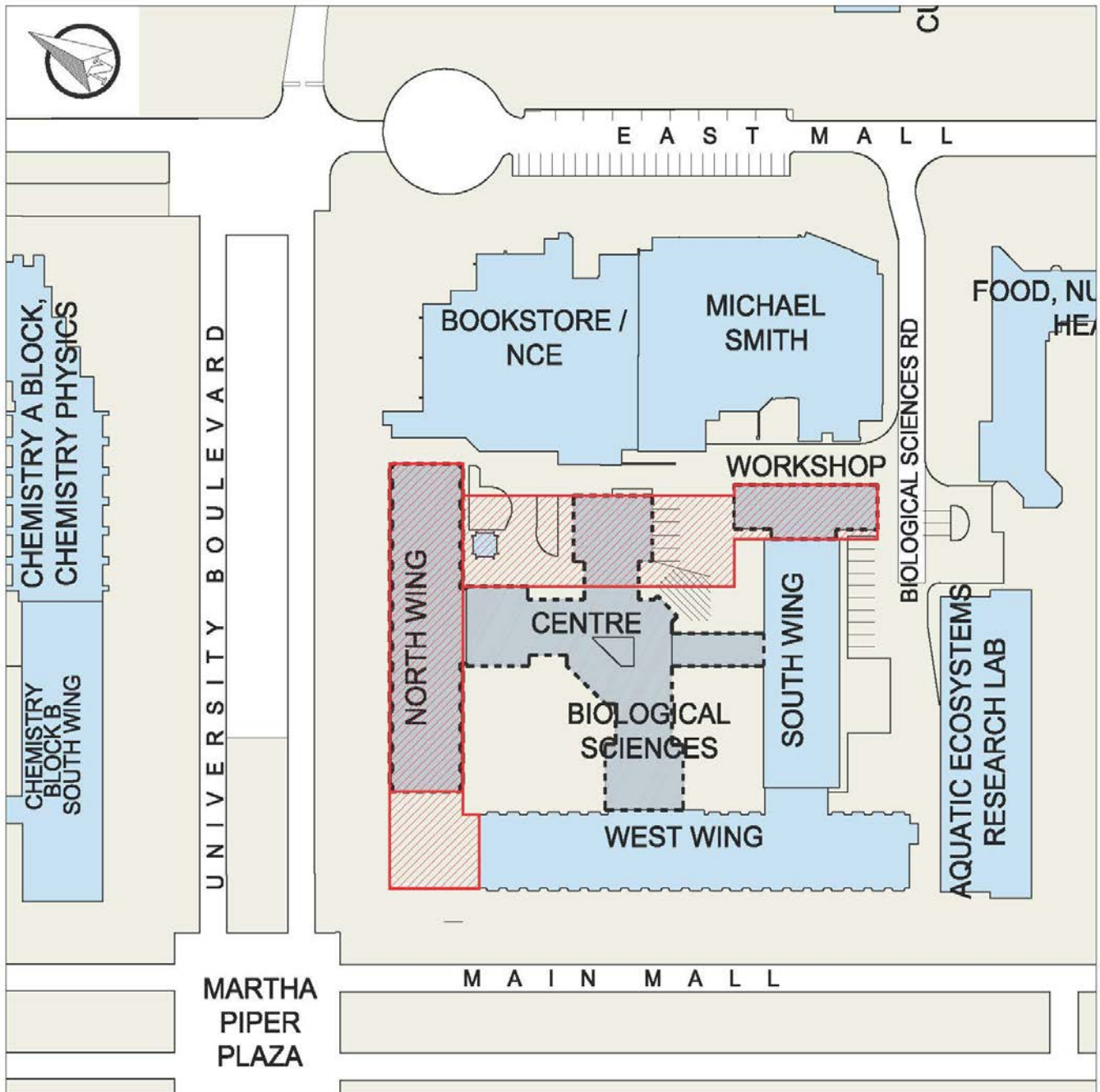
Attachment 1: Context Map with Relevant Buildings

Potential University Housing Sites

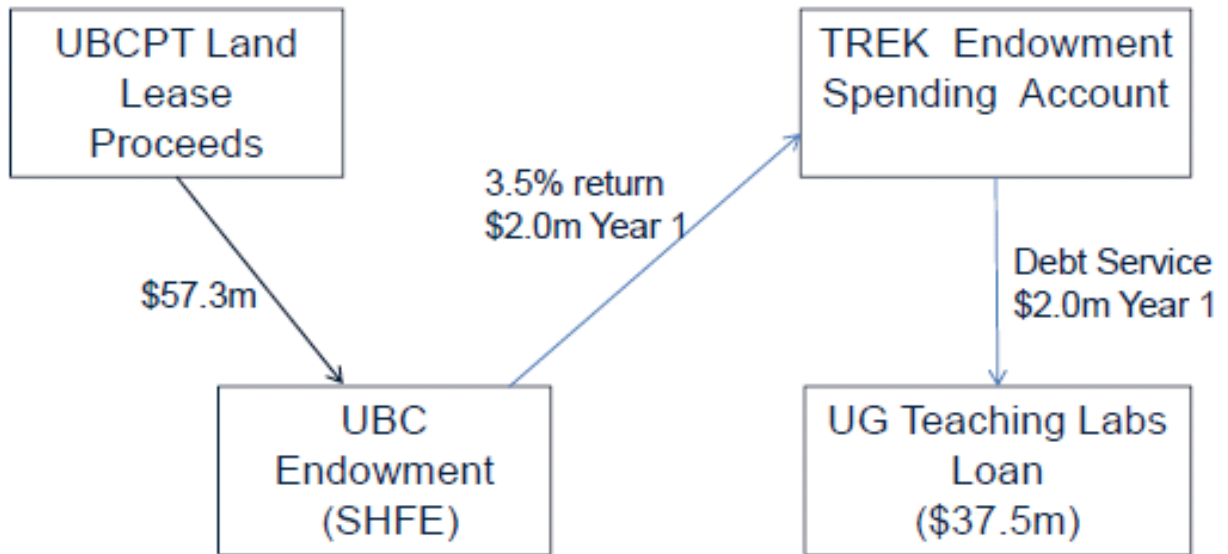


Undergraduate Life Sciences Teaching Labs Project Site


Attachment 2: Biological Sciences North & Centre Project Site



Attachment 3: Land Development Funding Model – Flow of Funds




## Attachment 4: Capital Project Accountability Scope &amp; Planning

PROJECT NAME		CURRENT APPROVAL STATUS				
	<b>Project Name:</b> Undergraduate Life Sciences Teaching Labs		<b>Level</b>	<b>Approval Date</b>		
	<b>Department/Unit:</b> Faculty of Science, Faculty of Medicine	<b>Executive:</b>	3	Dec. 16, 2003		
	<b>Sponsor:</b> David Farrar, Provost & VP Academic	<b>Board:</b>				
PROJECT DESCRIPTION		FUNCTIONAL PROGRAM				
<b>Development Type:</b>	Renovation & Expansion	<b>Space Type</b>	<b>Net SM</b>	<b>Net SF</b>	<b>Gross SF</b>	
<b>Facility Type:</b>	Teaching Laboratories, Classrooms, Office & Support; Core Building & Research Functions	<b>Total</b>	10,234	110,158	174,795	
		<b>See Functional Program</b>				
<b>Gross Building Area:</b>	174,795 gross square feet (16,240 gm)					
<b>Capital Cost:</b>	\$80,000,000					
<b>Location/Site:</b>	UBC Vancouver					
<b>Primary Users / Tenants:</b>	Science - Botany, Zoology, Microbiology, Co-op; Medicine - Biochemistry, CPS					
PROJECT RATIONALE & BENEFITS						
<b>Need/Benefit Area</b>		<b>Description</b>				
Learning & Research Environment		Modern, well-equipped teaching laboratories for students in life sciences programs				
Student Amenity						
Community Amenity						
Other Benefits:		This project will replace and consolidate deteriorated teaching labs in the Biological Sciences Centre and North, Wesbrook and D.H. Copp buildings. The project will also address seismic risk associated with these buildings, which have all been rated high or very high risk, and ultimately result in the elimination of up to \$85M in deferred maintenance. Completion of the project will up the Copp site for re-development for housing. Replacement of the deteriorating Biosci complex research support and core building functions completes the renewal of research facilities for Zoology and Botany.				
SCHEDULE		SUSTAINABILITY GOALS				
		<b>Target</b>	<b>Actual</b>	<b>Indicator</b>	<b>Target</b>	<b>Actual</b>
Board 1		April-2014		<b>Certification:</b>	LEED Gold	
Treasury Board Approval		Fall-2014		<b>Energy Efficiency Level:</b>	TBD % better than MNECB	
Board 2		Dec-2014		<b>Energy Use Intensity:</b>	221 kWh/ft <sup>2</sup>	
Board 3		Jun-2015		<b>GHG Reduction:</b>	TBD % better than standard	
Construction Start		Jun-2015		<b>Const Waste Recycling</b>	TBC % recycling rate	
Substantial Completion		Jun-2017		<b>Water Use Efficiency</b>	TBD % better than standard	
Occupancy		July 2017		<b>Innovative Features:</b>		
Board 4		Jun-2019				
DEVELOPMENT PROCESS						
<b>Project Manager</b>	UBC Project Services			<b>Construction Manager</b>	TBD	
<b>Architect</b>	TBD			<b>Infrastructure Development Rep</b>	Barbara Gordon	
	<b>Date</b>	<b>Comments</b>				
<b>AJDP Review</b>	Sept/Oct 2014					
<b>Dev. Review Committee</b>	Sept/Oct 2014					
<b>Public Open House</b>	Oct-2014					
<b>Development Permit</b>	Jan-2015					
<b>Building Permit</b>	Jun-2015					
CAMPUS & COMMUNITY PLANNING COMMENTS						
See Campus & Community Planning review in body of document.						



Attachment 5: Capital Project Accountability Budget & Financing

PROJECT NAME									
	<b>PROJECT NAME:</b> Undergraduate Life Sciences Teaching Labs								
	<b>Department/Unit:</b> Faculty of Science, Faculty of Applied Sciences								
	<b>Sponsor:</b> David Farrar, Provost & VP Academic								
CAPITAL BUDGET (\$000s)				LIFE-CYCLE OPERATING BUDGET					
Capital Development Cost		\$000s	\$/GSF	Operating Costs		Annual \$	\$/GSF	Funding Source	
Construction		\$ 51,824	\$ 296	Ops & Maintenance*		\$ 1,113,444	\$ 6.37		
Design/Construction Contingency		\$ 1,785		Utilities		\$ 389,793	\$ 2.23		
Construction Management		\$ 2,073		Gross Total O&M Cost		\$ 1,503,237	\$ 8.60		
Cash Allowances		2,633		Less: Savings from Demolished Space**		\$ 474,931	\$ 5.67		
Planning & Design		5,182		Net O&M Cost		\$ 1,028,306			
Furniture & Equipment		3,750		* Amt derived from Whitestone Research & excludes landscape, mgmt overhead					
Commissioning, Inspection, Moving		829		** DEMOLITIONS: Bio Ctr 59,695 GSF; Bio North Rooftop Greenhouses 4240 GSF; Bio North Rooftop Mech PH 2960 GSF; 3rd flr bridge between BioSci N&W 2196GSF; BioSouth Spoke 6738GSF; Workshop 7642GSF; Paper Recycl/Flamm Stor 291GSF; TOTAL 83,762 GSF (7782 GSM)					
IBC, CAC, Permits, Insurance & Legal		525		Life-Cycle Capital Costs		Annual \$	\$/GSF	Funding Source	
Project Management		1,462		Cyclical Maintenance		\$ 613,530	\$ 3.51		
UBC IT/AV/Security Allowance		2,000		Modernization/Upgrade		\$ 162,559	\$ 0.93		
Swing Space and addl Westbrook upgrades		2,500		Total Cap Renewal Cost		\$ 776,090	\$ 74.25		
Additional Westbrook upgrades		2,580							
Subtotal		\$ 77,144	\$ 443						
Tax		1,230							
Retained Risk Contingency		446							
Construction Financing		1,180							
Total Project Budget		\$ 80,000	\$ 458						
Capital Budget Notes:		\$/GSF unit rates will vary with areas that are in renewed and new portions of project. AVED has been requested to provide routine capital funding for Westbrook upgrades.		Operating Budget Notes:		The Faculties of Science and Medicine will be responsible for the O&M costs. Central will fund life-cycle capital costs to the extent possible.			
FUNDING AGREEMENTS (\$000s)				FINANCING AGREEMENTS					
Funding Source	Liability with:	Committed	Secured*	Debt Serviced By:	Loan Amt*	Amort.	Int.	Ann. Payment	
GPOF - Central Admin	Internally financed	\$ 21,250	\$ -	GPOF - Central Admin	\$ 21,250	30	5.75%	\$ 1,506	
Provincial Gov't		\$ 21,250	\$ -						
Trek Endowment	Internally financed	\$ 37,500	\$ -	Trek Endowment	\$ 37,500	35	5.75%	\$ 2,491	
			\$ -		\$ -			\$ -	
			\$ -		\$ -			\$ -	
			\$ -		\$ -			\$ -	
<b>Total</b>		<b>\$ 80,000</b>	<b>\$ -</b>	<b>Total</b>	<b>\$ 58,750</b>			<b>\$ 3,997</b>	
* Funding paid or firmly committed to be paid before end of construction				* Loan amts in this case represent liabilities for unsecured funding sources					
Funding Notes:				Debt Capacity Impact:		Undergrad Life Sciences Teaching Labs Project has been included as a Priority 1B project in the Capital Plan and Liquidity Plan and therefore sufficient liquidity is available to support the immediate development of the project.			
PROJECT REQUIREMENTS CHECKLIST & SIGN-OFF									
CHECK	REQUIREMENT	NAME	SIGNATURE	DATE					
	Programmatic need and benefit	Dean of Science Dean of Medicine	Simon Peacock Gavin Stuart	20-Mar-14					
	Project scope and budget P3 screen Project manager assignment Swing space requirements	Infrastructure Development Managing Director	John Metras	20-Mar-14					
	Project site Development review process Sustainability measures	Campus & Community Planning Associate Vice President	Michael White	20-Mar-14					
	Classroom/teaching lab review	Infrastructure Development Managing Director	John Metras	20-Mar-14					
	Food, housing and child care	Student Housing & Hospitality Services Managing Director	N/A						
	Funding & financing agreements Debt capacity	Treasury Treasurer	Peter Smailes	20-Mar-14					
	Fundraising plan	Development Office AVP, Development Services							
	Life-cycle operating costs	Infrastructure Development Managing Director	John Metras	20-Mar-14					
	Security & access control Parking	University Community Services Managing Director							
ATTACHMENTS									