

<b>SUBJECT</b>	<b>DOUGLAS T. KENNY BUILDING (PSYCHOLOGY) FOURTH FLOOR RENOVATION</b>
<b>MEETING DATE</b>	<b>APRIL 18, 2019</b>

Forwarded on the Recommendation of the President

**APPROVED FOR SUBMISSION**



for Santa J. Ono, President and Vice-Chancellor

<b>DECISION REQUESTED</b>	<p><b>IT IS HEREBY REQUESTED that <i>BOARD 3 approval be granted for the Douglas T. Kenny Building Fourth Floor Renovation project for the Department of Psychology, with a funding release of \$6,640,000 to undertake construction.</i></b></p>	
	Capital Budget	\$7,640,000
	Operating Budget	See report
	Schedule	
	Program	
	Award Construction Contracts	
	<b>Funding Release</b>	<b>\$6,640,000</b>
	<b>Information</b>	
	Expenses to date	\$398,632
	Funding released to date	\$1,000,000

<b>Report Date</b>	March 15, 2019
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**Presented By** Andrew Szeri, Provost and Vice-President Academic  
 Peter Smailes, Vice-President Finance & Operations  
 Gage Averill, Dean, Faculty of Arts  
 John Metras, Associate Vice-President, Facilities  
 Jennifer Sanguinetti, Managing Director, Infrastructure Development

<p><i>If this item was previously presented to the Board, please provide a brief description of any major changes since that time.</i></p>	<p>Since receiving Board 2 approval in December 2018, the project team has completed design and received market pricing that is within the allowed budget. Hazardous material abatement work has been tendered and work has commenced as per the Board 2 approval.</p>
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**EXECUTIVE SUMMARY**

UBC's Department of Psychology, ranked first in Canada and tenth in the world by *Times Higher Education* in 2018, has reached this distinguished status from its primary home in the Douglas T. Kenny Building (the Kenny Building). Department members conduct leading research in a broad range of areas, including behavioural neuroscience, clinical, cognitive, developmental, health, quantitative, and social/personality psychology. The department expects to welcome five new faculty members in the near future, and needs to create lab space to support their research.

The fourth floor of the Kenny Building was originally fitted out as a dedicated animal research facility. It was decommissioned in spring 2017, and the research relocated to newer, custom-built research spaces elsewhere on campus as part of the overall consolidation of animal research facilities. As a result, the approximately 15,600 sq.ft. fourth floor will be fully renovated to create research labs, similar to other labs in the building, that will accommodate the expansion of the department.

The project team has completed the detailed design and has issued construction documents for tender. Tendered bid prices for the full scope of construction have been received and are within the allowed budget. The project anticipates a start of construction in May 2019 should Board 3 approval be granted. Because the area of the renovation within the Kenny Building was used as an animal care facility and because of the vintage of the building, preliminary assessment indicated significant hazardous material and asbestos remediation would be necessary. Approval was granted at Board 2 to commence this work early to better manage project scope, schedule and budget. The demolition and hazardous materials removal has been tendered and awarded, and is scheduled to occur through March and April 2019.

Detailed seismic modelling of the building confirms that the Kenny Building is a high priority building, and that the building has a very high (70%+) probability of collapse in a very rare earthquake. The Seismic Resilience Plan presented to the Board in February 2019 indicates that Kenny is now classified as a Tier V risk and recommends replacement in the long term with targeted retrofit in the near term. The building is ranked 13<sup>th</sup> in priority for mitigation, suggesting that replacement is more than 10 years away. In the meantime, the Psychology Department's ongoing and increasing space shortage is becoming critical, and the investment in the 4<sup>th</sup> floor is expected to provide many years of excellent lab space for leading research. Concept seismic retrofits for the Kenny Building have been developed that have allowed the design team to strategically isolate likely areas of intervention so that a future retrofit can be performed with minimal impact to the current proposed renovation work on the fourth floor.

The project has a final capital budget of \$7.64M and will be fully funded by the Faculty of Arts and the Department of Psychology. The accuracy of the final cost estimate is -5% to +10%. No central funding or financing is required. Project completion is targeted for December 2019.

The Kenny Fourth Floor Renovation project received Board 1 approval in June 2018 and Board 2 approval in December 2018. The project is being managed by UBC Project Services.

#### Attachments

1. Context Map

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#### STRATEGIC CORE AREAS SUPPORTED

People and Places       Research Excellence       Transformative Learning       Local / Global Engagement

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**DESCRIPTION & RATIONALE** The Department of Psychology at UBC Vancouver is one of the world's leading units of its kind, currently ranked first in Canada and tenth in the world by Times Higher Education. It is the largest unit within the Faculty of Arts, with seven primary research areas – behavioural neuroscience, social/personality, cognitive, developmental, health, quantitative, and clinical.

The Department plans to welcome five new faculty members in the near future, and it anticipates future faculty growth in subsequent years. Each new researcher will require a dedicated research lab plus space for their graduate students to work, but no such space is currently available. The department is also in need of space for teaching assistants to meet with students. In addition, the existing departmental lounge on the second floor is undersized and inadequate as the department's only large meeting room, and there is a significant need for a multi-use space for departmental meetings, public lectures, and other events.

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As a former animal research space, the fourth floor was designed with very few windows, making the space mostly unsuitable for offices. The few existing windows will be used primarily for shared offices for teaching assistants. Based on experience with research labs on other floors, it is expected that most of the fourth floor research labs will not require windows, making this an ideal location for research lab expansion. The fourth floor is also an excellent location to create a new appropriately-sized multi-purpose departmental meeting space.

### **Seismic Review**

UBC has recently completed detailed assessments of higher risk buildings as part of the process of updating the seismic mitigation plan. The initial seismic screening assessment completed in 2017 indicated that the Kenny Building is a Tier III building, which translates to a 20-49% risk of collapse in a very rare earthquake. As reported to the Board of Governors in February 2019, the Kenny Building was studied using a detailed seismic modelling analysis to fully understand the level of seismic risk and vulnerability of the building. In order to provide the detailed model with as high a degree of accuracy as possible, destructive testing was completed in summer 2018 in order to verify the material strength of the columns and shear walls in the present structure. The detailed seismic modelling work for Kenny was completed in October 2018.

The detailed seismic study subjected the detailed model to a series of ground motions that simulated seismic events most likely to occur in UBC's geological position. A baseline study was undertaken to simulate a large scale, very rare event (975 year return period), to fully understand potential for failure, including partial or total collapse. The results confirm that Kenny has areas of critical structural vulnerability that pose a significant risk in a large magnitude seismic event. The building was evaluated to have a Tier V rating under the present analysis, corresponding to a probability of collapse of 70%+ at the 975 year magnitude event. The building is ranked 13<sup>th</sup> in priority for mitigation, with replacement recommended in the long term (10+ years) and targeted retrofit in the near term to address critical vulnerabilities.

Using the detailed model results, a concept seismic retrofit study has been completed to fully understand the scope of an intervention required to address the structural deficiencies. Having both of these studies has allowed the Fourth Floor Renovation project consultant team to strategically isolate likely areas of intervention, so that a future retrofit can be performed with minimal impact. For instance, the detailed modelling study points to structural vulnerability at the perimeter of the floor space under consideration – for example, at the atrium edge at the column connection. By keeping new services away from the perimeter edges in question, a future structural intervention could potentially be performed without disruption to the renovated interior building systems.

With the detailed seismic vulnerability modelling, the project team has strategically designed as much as possible around areas that are likely to require intervention, anticipating a future seismic upgrade or structural retrofit. While a future seismic upgrade of the Kenny Building remains likely to be a costly and complicated intervention, the current fourth floor renovation has been designed with a high degree of anticipation of its impact on this floor level.

As outlined in the Risks section below, there is also a risk with slowing or stopping the renovation and not providing the space that would allow the department to meet its research priorities in a timely way. Consequently, the Fourth Floor Renovation project remains a prudent and necessary investment to meet Psychology’s needs over the coming years.

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**BENEFITS**

Learning, Research,  
Financial,  
Sustainability &  
Reputational

- The fourth floor of the Kenny Building is currently vacant after over 30 years of use as animal research labs. Renovating the space will provide a significant amount of much-needed capacity to a signature department in the Faculty of Arts with minimal impact on surrounding buildings and no impact on the campus’ limited site capacity.
- The renovation will allow the department to continue to attract leading research faculty for several years.
- With the detailed seismic vulnerability modelling, the consulting team has strategically designed around areas that are likely to require intervention in anticipation of a future seismic upgrade or structural retrofit.

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**RISKS**

Financial,  
Operational &  
Reputational

- The Kenny Building has a high degree of structural vulnerability as determined by a detailed seismic modelling study simulating building performance in a very rare earthquake. While the overall recommendation for Kenny points to full replacement as a recommended means of achieving seismic safety, the detailed analysis identified possible near-term measures which could be considered to mitigate life-safety risks within the building. These measures have been considered at a concept feasibility level so that the present renovation could anticipate as much as possible the level of disruption of future seismic mitigation to the fourth floor of Kenny. No structural seismic mitigation work is included in the present renovation scope.
  - The building was constructed in 1983 and is expected to require major renewal work in the next 10 years. Renewal of the roof was recently completed; renewal and upgrade of the atrium glazing and skylights and major components of the building’s mechanical systems are currently underway as part of the Routine Capital program. Some building system renewal will be undertaken on the fourth floor as part of this project. Given the critical need for additional research space, the Department of Psychology is prepared to move forward with the renovation project with the understanding that further operational disruption may be incurred in the building to address future building renewal and seismic upgrade requirements.
  - Current market conditions are resulting in unusual levels of cost escalation due to a high level of market activity that has reduced contractor availability and bid coverage. An escalation contingency of 6% was originally included in the cost estimate to mitigate this risk. The escalation factor has now been reduced to 0% to reflect the current timeline of the project and secured tender pricing. The design contingency has also been reduced from the original 10% to 2% to reflect to greater understanding of project parameters and increased design definition.
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- The Kenny building has significant asbestos remediation requirements and removal of glass pipes is required, adding further complexity to the demolition phase. The project team conducted an extensive environmental assessment to identify the abatement risks in advance of the construction phase of the project. These risks have been factored into the construction contingency allowance. Mitigating these environmental risks by advancing selective demolition and hazardous material abatement formed part of the Board 2 funding approval.

**COSTS**  
Capital & Lifecycle  
Operating

**Capital Budget**

Project Services has estimated the total cost of the project to be \$7.64M based on secured tenders for both the hazmat/demolition and construction phases. The budget still includes contingency as recommended by Ross Templeton + Associates (cost consultant), due to the age of the building and possible unforeseen conditions.

The total estimated project cost is unchanged from Board 1. As noted, the costs presented are tendered values. The accuracy of the final cost estimate is -5% to +10%.

<b>CAPITAL BUDGET</b>		
<b>Component</b>	<b>Total \$</b>	<b>\$/gsf</b>
Construction (includes hazmat abatement)	\$ 3,844,100	
General Conditions	\$ 680,000	
Construction Management Fee	Included above	
Construction Contingency	\$ 580,000	
<b>Total Construction</b>	<b>\$ 5,104,100</b>	<b>327</b>
FF+E	\$ 240,000	
UBC IT + AV Equipment Allowance	\$ 455,000	
Fire, Safety & Security	\$ 68,000	
Building Operations	\$ 71,000	
Design Contingency (2%)	\$ 102,900	
Escalation Contingency (0%)	\$ 0	
<b>Total Cash Allowances</b>	<b>\$ 936,900</b>	<b>60</b>
Design Consultants	\$ 914,000	
Project Management	\$ 423,000	
Permits - BP/IIC	\$ 37,000	
Insurance/Legal	\$ 3,500	
Commissioning Insp + Testing	\$ 22,500	
<b>Total Soft Costs</b>	<b>\$ 1,400,000</b>	<b>89</b>
<b>Project Subtotal</b>	<b>\$ 7,441,000</b>	<b>475</b>
Tax	\$124,500	
Construction Period Financing	-	
Retained Risk Fee	\$74,500	
<b>PROJECT TOTAL</b>	<b>\$7,640,000</b>	<b>488</b>
Accuracy of Estimate	-5% to +10%	
Gross Area (ft <sup>2</sup> )	15,650	

**Operating Cost**

There is no increase in building area required for this project. Therefore, there will be no change in the annual operating cost and no requirement for additional operating funding.

**FINANCIAL**  
Funding Sources,  
Impact on Liquidity

The Faculty of Arts and the Department of Psychology will fund this project using their reserves. The Faculty can fund the project up to the cost noted in this report. Should the project cost increase, scope reductions will be investigated to bring the project back within budget. Treasury has taken the accompanying liquidity draws into account and confirmed that there is sufficient liquidity to support the project. Internal debt financing will not be required for this project.

**SCHEDULE**  
Implementation  
Timeline

It is estimated that design, construction and fit up can be completed in approximately 18 months, with demolition targeted for March-April 2019 and construction start by May 2019. The project schedule including approval steps is outlined below.

Milestone	Target Date
Executive 1+2	April 2018
PPAC + SABNC	April 2018
Executive 3	April 2018
Board 1	June 2018
Board 2	December 2018
Demolition Start	March 2019
Board 3	April 2019
Construction Start	May 2019
Occupancy Permit	December 2019
Board 4	December 2021

**CONSULTATION**  
Relevant Units,  
Internal & External  
Constituencies

The Kenny Fourth Floor Renovation Project was presented for information at the April 17, 2018 meeting of the Property & Planning Advisory Committee (PPAC) and the Senate Academic Building Needs Committee (SABNC).

UBC Project Services is managing the design and construction of the project.

<b>Previous Report Date</b>	December 4, 2018
<b>Decision</b>	Board 2 approval with a funding release of \$500,000.
<b>Action / Follow Up</b>	Complete working drawings and tender documents and commence selective interior demolition and hazardous material abatement.
<b>Previous Report Date</b>	June 14, 2018
<b>Decision</b>	Board 1 approval with a funding release of \$500,000.
<b>Action / Follow Up</b>	Complete schematic design.

Attachment 1. Context Map

