March 2, 2021

British Columbia Institute of Technology
1126 Barclay Street
Vancouver, British Columbia, V6E 1H1

Attention: Anne Matheson

Re: Job #276537 – Return to Operations Risk Assessment – Housing – REVISED March 2, 2021
BCIT, 2700 Willingdon Avenue, Burnaby, British Columbia

Pinchin Ltd. (Pinchin) is pleased to provide the attached Return to Operations Risk Assessment – Housing, for the campuses and programs operated by the British Columbia Institute of Technology (BCIT; "Client"). This package is a revised version of that previously provided to the Client, dated September 2, 2020.

The Risk Matrix is a form of qualitative public health risk assessment, which can be used to help identify the building occupants and activities that present the greatest risk of SARS-CoV-2 virus spread, aid the communication of these risks and inform the selection of management measures, during various stages of the return to operations, following a pandemic-induced mandatory shutdown.

The objective of each Risk Matrix is to identify the main sources of risk associated with the transmission of SARS-CoV-2, while engaging in a set of defined activities within the campus environment. The Risk Matrix takes into consideration building occupants, staff and visitors and the activities in which they engage as well as the building or room uses and layouts. Based on the risk rankings, the matrix provides high level recommendations for prioritizing management measures to mitigate spread of SARS-CoV-2 as activities within the building resume. The Risk Matrix is intended as an appendix to the BCIT COVID-19 Go Forward Plan, which Pinchin has provided under separate cover.

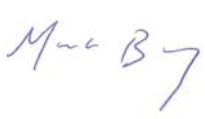
I trust this information is satisfactory for your purposes. Should you require additional information, please do not hesitate to contact the undersigned.

Pinchin Ltd.

Prepared by:

Hussien Jaffer, BASc., CIH, CRSP
Operations Manager, Occupational Health and Safety
604.839.6585
hjaffer@pinchin.com

Reviewed by:



Mark Beasy, M.Sc., QP$_{RA}$
Senior Risk Assessor, Environmental Due Diligence and Remediation
437.341.3577
mbeasy@pinchin.com

Characteristics/ Activities	Risk Ranking (LOW-MED-HIGH)	Rationale	Risk Management Strategies
Building Occupants/ Location/ Likelihood of Public Access			
• Possibility for infected asymptomatic spreaders. • Transportation methods and likelihood of transmission from unknown sources. • Location within Province/Canada and incidence of infection within the Region.	HIGH	The Site is any Student Housing building (SW10 - SW15) associated with British Columbia Institute of Technology (BCIT). The Site is likely located in an urban area with the potential for a medium to high population density. A second wave of COVID-19 cases is currently underway within the province as a whole, particularly within the Lower Mainland region. It is assumed that there is at least one infected person accessing each building, and for remaining rows of this matrix it is assumed there is at least one asymptomatic individual present on-Site. For the purpose of this RA Matrix, it is also assumed that the Client is planning on the full re-occupancy of each building. BCIT Student Housing has 7 houses with 4 suites each. Each suite has 12 single occupancy bedrooms (6 bedrooms per floor), and 2 showers, 2 toilets, 2 sinks, 2 kitchens, 1 dining room and 1 living room per floor. There are also 7 fully enclosed one-bedroom apartments (1 per building) occupied by live-in resident advisors. Building occupants include students who are young adults and older. It is assumed that there is limited or no public access to housing spaces but that occupants might entertain visitors.	✓ Conduct health screening through self-assessment daily (i.e. BC COVID-19 Self-Assessment Tool). ✓ Instruct building occupants to stay in bedroom if they are showing symptoms, self-isolate if they have conducted any travel internationally and notify housing staff. ✓ Prepare isolation/quarantine protocol for sick residents as well as meal plan options for those in isolation/quarantine. ✓ Mandate that all students and staff returning to campus take training on COVID-19 prevention strategies (physical distancing, face coverings, hand washing, etc.). ✓ Limit public/visitor entry to essential visits only. ✓ Control/limit entry/exit via specific routes to ensure signage is observed and space planning is completed. ✓ Prohibit guests/visitors or set up a visitor schedule.

Characteristics/ Activities	Risk Ranking (LOW-MED-HIGH)	Rationale	Risk Management Strategies
		Students may visit other campus facilities located in the Greater Vancouver Area to attend classes. Building occupants may include individuals who have been exposed to SARS-CoV-2 from outside sources such as family members, users of public transit, and medical or long-term care professionals. Exposure frequency and duration to infected individuals would vary depending on activity. However, risks were considered high due to the recent surge in incidences in the region, the likelihood of viral transmission by a symptomatic person and the fact that, with the exception of advisors, building occupants are living in close quarters and anticipated to spend prolonged periods of time within the residence each day.	
General Building Layout / Indoor Environment			
• Access routes (building entry and exit).	MEDIUM	Entrance/exit may result in individuals crossing paths at pinch points. Exposure frequencies and durations could be high if arrival and departure times coincide for large numbers of students arriving together according to class schedules. In addition, there is potential for contact with high touch surfaces during building entry/egress. Although a high-risk ranking might apply to this type of building and the activities within, the medium risk ranking is based on activities during entry and exit and moving through the hallways.	✓ Control/limit entry/exit via specific routes to ensure signage is observed and space planning is completed. ✓ Prepare enhanced cleaning/ sanitizing plans. ✓ Remove furniture from entry/exit points; alternatively, re-position or appropriately label for physical distancing. ✓ Adopt doorknob contact mitigation measures

Characteristics/ Activities	Risk Ranking (LOW-MED-HIGH)	Rationale	Risk Management Strategies
		The primary mode of viral transfer is direct contact with droplets, and it is anticipated that the potential exposures are of short duration until such time as students/staff enter specific rooms. In addition, there is a small number of high touch surfaces, despite the number of people touching them and frequenting the access routes.	such as: • Providing tissues; • Providing hand sanitizer; or • Leaving doors open.
• Hallways	MEDIUM	Narrow hallways that may be frequented by staff and students and could result in exposure if people linger to converse. Otherwise, risks would be considered low due to presumed low frequencies and short exposure duration when passing through.	✓ Implement traffic patterns where possible. ✓ Restrict gatherings in hallways\discourage loitering. ✓ Remove furniture or re-position for physical distancing. ✓ Use physical distancing floor decals throughout corridors.
• Toilet rooms • Shower rooms • Sink areas	MEDIUM	Physical distancing in shared washrooms might be difficult, however, overall exposure duration is shortened. Shower and toilet rooms are single occupancy, however, are shared spaces. There is a high number of high-frequency touch surfaces (high touch surfaces); however, soap and water are readily available. Two sink areas are present in each unit and contain toiletry cabinets for storage.	✓ Set washroom capacity limits. ✓ Take measures to encourage distancing while using sinks or install barriers. ✓ Encourage/ remind hygienic practices using signage. ✓ Adopt doorknob contact mitigation measures. ✓ Prepare enhanced cleaning/ sanitizing plans for all washroom surfaces. ✓ Work with building operator/external bodies to establish management strategies. ✓ Mandate that personal items are to be stored in bedrooms. ✓ Assign a shower, toilet and sink to specific students.

Characteristics/ Activities	Risk Ranking (LOW-MED-HIGH)	Rationale	Risk Management Strategies
• Kitchens	MEDIUM	Two shared kitchens are in each unit, each with two stoves, two sinks and four refrigerator/freezers, all of which could entail frequent touching. The main avenue for viral spread is direct contact with saliva/droplets, therefore exposure via shared dishes is considered to be a high risk. Physical distancing might be difficult and there are a high number of high-frequency touch surfaces (high-touch surfaces); however, soap and water are readily available.	✓ Stagger meal preparation schedules. ✓ Set room occupancy limits. ✓ Assign appliances and cabinetry to specific students. ✓ Eliminate shared dishes/utensils, if any. ✓ Store small appliances (toaster, coffee maker, etc.) in assigned cabinetry to be used by owner only. ✓ Implement traffic patterns where possible. ✓ Prepare enhanced cleaning/ sanitizing plans. ✓ Provide signage to encourage frequent and proper handwashing. ✓ Adopt doorknob contact mitigation measures.
• Dining Rooms	MEDIUM	Units are furnished with a dining room table and chairs. Microwaves are present in each dining room. Physical distancing would be difficult and there are a medium number of high-touch surfaces.	✓ Limit number of students using space or set schedule for use to allow for physical distancing. ✓ Develop alternate dining protocol for physical distancing (e.g. outside, in bedroom etc.). ✓ Establish cleaning/ sanitizing plans for all surfaces.
• Living Rooms	MEDIUM	Units are furnished with a sectional couch, television and stand. Physical distancing would be difficult and there are a medium number of high-touch surfaces.	✓ Limit room occupancy to ensure physical distancing. ✓ Establish cleaning/ sanitizing plans for all surfaces.

Characteristics/ Activities	Risk Ranking (LOW-MED-HIGH)	Rationale	Risk Management Strategies
• Housing Resources Area ▪ Mail/package pick-up ▪ Student lounge ▪ Vending machines	MEDIUM	Evidence of viral transmission via packaging has been limited; anticipated viral dose from packaging and vending items is assumed to be low.	✓ Establish mail/package pickup procedures. ✓ Limit use of student lounge or temporarily close. ✓ Establish cleaning procedure for vending machine use. ✓ Require face coverings accessing public common areas.
• Laundry Room	MEDIUM	Machines are coin-operated, and a folding table are available for use. Physical distancing might be difficult and there are a medium number of high-frequency touch surfaces (high-touch surfaces); however, soap and water are readily available.	✓ Establish a schedule for use. ✓ Establish cleaning procedure. ✓ Reduce occupancy limits of room. ✓ Require face coverings in laundry room. ✓ Install card activated machines for payment.
Building Conditions			
• Humidity (%) • HVAC system for building (fresh air intake) • Exhaust vents in washrooms	LOW	Air/ventilation is not believed to be a primary means of viral spread and humidity is believed to play a role in viral transmission. Exhaust ventilation is present in all washrooms.	✓ Manage humidity (40-60%). ✓ Optimize ventilation rates. ✓ Regular HVAC maintenance/ filter changes. ✓ Consider particulate or air quality monitoring to determine air quality.
Non-Regular Activities			
• Fire drills • Fire/first aid • Fire doors	MEDIUM	Emergency drills or actual events could result in disorderly conduct and crowding. First aid emergencies may require close proximity with the injured.	✓ Prepare emergency plan for non-scheduled maintenance, illness or fire. ✓ Consider alternate methods for doing drills.

Characteristics/ Activities	Risk Ranking (LOW-MED-HIGH)	Rationale	Risk Management Strategies
		Risk level is considered medium due to the short duration of building egress during drills and availability of fresh air during mustering outdoors.	
• Check-In Procedure	HIGH	Students will be required to physically present themselves to pick up keys/maps, get photographed, and receive on-site orientation.	✓ Stagger move-in dates to limit crowds and loitering. ✓ Develop a protocol for Check-In procedures and transfer of keys. ✓ Minimize handouts and materials to be distributed where possible. ✓ Provide sanitization stations. ✓ Provide barriers or physical distancing protocols between reception staff and students. ✓ Determine entry and exit routes out of reception area.
Other Building Access Routes			
• Stairs • Other high touch surfaces • Outdoor spaces	MEDIUM	Students may require the use of stairwells to access certain spaces. There is potential for crowding in stairwells, however exposure is likely to be infrequent and duration is likely to be low so long as people don't linger. High frequency touch areas include entry doors, stairway handrails, and waste receptacles. There may be outdoor spaces where students and staff may gather (i.e. picnic tables, benches, smoking areas).	✓ Adopt doorknob contact mitigation measures. ✓ Limit entry/exit through certain doors and establish on-way traffic in stairwells. ✓ Prepare enhanced cleaning/ sanitizing plans. ✓ Provide signage regarding stair handrails. ✓ Discourage loitering. ✓ Provide sanitizing stations. ✓ Maintain physical distancing in outdoor spaces or limit occupancy.

Characteristics/ Activities	Risk Ranking (LOW-MED-HIGH)	Rationale	Risk Management Strategies
			✓ Rearrange outdoor seating or use decals on outdoor benches/picnic tables to promote physical distancing. ✓ Work with building operators/external bodies to establish management strategies.
• Parking (indoor/outdoor/car park)	LOW	Students and staff may have access to vehicle parking within the vicinity of the Site. Parking areas are conducive to low exposure duration and frequency and are likely to have better ventilation than indoor environments. Parking kiosks are considered high touch surfaces.	✓ Encourage physical distancing measures through signage. ✓ Promote contactless payment. ✓ Prepare enhanced cleaning/ sanitizing plans.
Extended Vacancy Issues			
• Legionella/water quality • Mould • HVAC routine maintenance • Floor drains	LOW	All buildings have been under continued (limited) occupancy during the pandemic/ were never completely shut down. Water quality, mould and HVAC maintenance issues are not anticipated.	✓ Water system flush. ✓ Change HVAC filters.