Facility of Applied Science
Chemical and Biological Engineering
COVID-19 Intermediate Plan

This Building Safety Plan will be developed by Local Safety Teams, and approved by Unit Heads/Directors. This plan will include a review of common areas to ensure effective controls are in place to prevent the spread of COVID-19. This document must reflect current government guidance and notices which can be found, along with information about UBC’s response to the pandemic at https://covid19.ubc.ca/.

Department / School: Chemical and Biological Engineering
Facility Location(s): CHBE (incl CERC), PPC (incl BPI), Gas-Gun Facil.
Proposed Return to Campus Opening Date: 17 August 2020

Introduction to Your Operation

1. Scope and Rationale for Opening

The research and teaching mission in the Department of Chemical and Biological Engineering in the Faculty of Applied Science requires specialized equipment or laboratories that can only be accessed on campus at UBC. The COVID-19 shutdown is having a significant effect on graduation times, grant-mandated project completion, career progression, teaching preparation, and lecture delivery.

The Department of Chemical and Biological Engineering and its associated research spaces (including the Clean Energy Research Centre (CERC), the Pulp and Paper Centre (PPC) and the BioProducts Institute (BPI) housed within it, and the Gas-Gun Facility (GGF)) will continue to have open only those spaces and facilities necessary to conduct on-site work. This necessary on-site work and space include, but are not limited to

- Preparing for and conducting all teaching and teaching-laboratory operations, which will necessitate use of
  - departmental teaching laboratories
  - dedicated reservable rooms and facilities for recording/conducting on-line teaching
  - faculty offices and resources (e.g. photocopier) within main admin offices (CHBE, CERC)
  - offices used by teaching assistants and other non-faculty teaching-related personnel
- Research operations, which will necessitate further use of
  - individual PI research laboratories and shared laboratory/core facility spaces
  - faculty offices and resources within main admin offices (CHBE, CERC)
  - research HQP offices
  - CHBE library
- Departmental administration, safety and technical support activities
  - Main administrative offices of CHBE and CERC
  - CHBE Stores
  - CHBE Machining and Fabrication Workshop
  - CHBE Electrician Shop
- Custodial services
- Common areas (atrium, washrooms, hallways, lunchroom, etc.)
- Dedicated custodial rooms (supply rooms, etc.)
- Common non-technical activities
  - Common areas (atrium, washrooms, hallways, lunchroom, etc.)

All of these stated activities are expected to phase in as needed starting the week of 17 August 2020.

Preparation and review of this “intermediate” plan was overseen by the CHBE Local Safety Team in consultation with the CHBE Department Head and the Director of CERC. Final unit-level approval was provided by the Head of CHBE, and the plan then submitted to the APSC Dean’s Office for review by that unit, as well as the APSC Return to Campus Committee. The overall Flow Chart for intermediate plan review and approval is provided in Appendix A.

Review and evaluation of “child” plans (Appendix A) for specific personnel will be overseen by the CHBE Local Safety Team in consultation with the CHBE Department Head and the Director of CERC. Departmental-level approval, including of plans for personnel within CERC, will be provided by the Head of CHBE in consultation with the CERC Director when appropriate. Setting of weekly R2C work schedules for approved personnel will be completed by the CHBE LST based on schedules submitted by approved supervisors and in a manner that ensures compliance with all health and safety guidelines.

Review and evaluation of all R2C “child” plans for specific personnel will be informed by and following Worker Priority Evaluation Chart provided in Appendix B.

As shown in the Priority Evaluation Chart (Appendix B), the department will define 5 priority levels (“tiers”) into which an individual applying for R2C approval may be binned. These priority tiers are intended to allow us to phase the return to research process temporally and according to current needs from the current (“tier 1”) stage specific to research personnel (< 33% of maximum occupancy) approved in the Stage I Return to Research process, up to < 66% maximum building occupancy when personnel within all 5 tiers are approved for R2C.

The initial Return to Research (R2R) Stage 1 mandated a cap of 33% (or 1/3) of occupancy which accommodated physical distancing protocols. The gradual yet wider Return to Campus (R2C) to support additional essential operations is triggering a revised and increased building and/or room capacity of 66% (or 2/3) of total occupancy in cases where the space accommodates required physical distancing protocols. Stage 3 is 100% occupancy in cases where the space accommodates physical distancing protocols. Each workspace, room, lab, office, etc. is unique and requires its own consideration. The timing of these stages is fluid and will align with provincial guidance.

This intermediate R2C plan and all appended documents comprising the full plan were prepared by Charles Haynes and Marlene Chow in consultation with the CHBE/CERC Local Safety Team, which includes representatives from the Faculty Association, AAPS, CUPE 116, CUPE 2950, and CUPE 2278, including representatives who also serve on the Faculty of Applied Science Joint Occupational Health and Safety Committee.
Section #1 – Regulatory Context

The following guidelines and guidance documents were used in developing the Return to Campus Plan for CHBE and CERC.

2. Federal Guidance

3. Provincial and Sector-Specific Guidance
   - BC’s Restart Plan: “Next Steps to move BC through the pandemic”
   - Thrive BC Self-Assessment Tool

4. WorkSafe BC Guidance
   - COVID-19 and returning to safe operation – Phase 2
   - WorkSafe COVID-19 Safety Plan
   - WorkSafe: Designing Effective Barriers
   - WorkSafe: Entry Check for Workers
   - WorkSafe: Entry Check for Visitors

5. UBC Guidance
   - UBC Employee COVID-19 PPE Guidance
   - UBC Employees COVID-19 Essential In-person Meetings/Trainings Guidance
   - UBC Employee COVID-19 Physical Distancing Guidance
   - COVID-19 Safety Plan for General Teaching Spaces
   - UBC Employee COVID-19 Use of UBC Vehicles
   - Ordering Critical Personal Protective Equipment
   - Building Operations Notice – COVID-19 Custodial Considerations Preventing COVID-19 Infection in the Workplace

6. Professional/Industry Associations
   - N/a

Section #2 - Risk Assessment

As an employer, UBC has been working diligently to follow the guidance of federal and provincial authorities in implementing risk mitigation measures to keep the risk of exposure as low as reasonably achievable. This is most evident in the essential service areas that have remained open on campus to support the institution through these unprecedented times. These areas have been very active with respect to identifying and mitigating risks, and further re-evaluating the controls in place using the following risk assessment process.

Prior to opening or increasing staff levels, including within CHBE and CERC: UBC has, particularly in cases where specific guidance as to activities under consideration are lacking, used the following risk assessment approach to determine activity level risk. That assessment, outlined below, includes
identifying the contact intensity and contact number for both the activity and within the organization as a whole:

1. What is the contact intensity in your setting and in the proposed activity – the type of contact (close/distant) and duration of contact (brief/prolonged)?
2. What is the number of contacts in your setting – the number of people present in the setting at the same time? As a result of the mass gatherings order, over 50 will fall into the high risk.

Using this risk assessment framework, CHBE has defined and will strictly enforce a R2C plan that not only prohibits, but effectively eliminates any and all high-risk activities from occurring. CHBE and CERC will further mitigate risk by adopting mandatory policies and controls, including:

- Physical distancing measures – measures to reduce the density of people
- Engineering controls – physical barriers (like Plexiglas or stanchions to delineate space) or increased ventilation
- Administrative controls – clear rules and guidelines
- Personal protective equipment – like the use of respiratory protection

7. Contact Density (Proposed COVID-19 Operations)
Describe the type of contact (close/distant) and duration of the contact (brief/prolonged) under COVID operations - where do people congregate; what job tasks require close proximity; what surfaces are touched often; what tools, machinery, and equipment do people come into contact with during work

- In R2R Stage 1, the goal was to reduce the number of people in buildings and labs to at most 1/3 of normal occupancy in order to limit contacts between people in lab spaces and in common spaces. Unit managers and the Head assigned maximum room occupancies to ensure that physical spacing is possible at all times. If a job or task required close proximity, the unit manager or Local Safety team (LST) consulted with SRS to do a PPE risk assessment in accordance with UBC guidance on COVID-19.
• In R2R Stage 2 and this wider R2C plan, the building/space capacity will increase to at most 2/3 of occupancy to enable more people to return to on-campus work, provided the protocols established herein and current provincial guidance can be met.

• Supervisors/managers are responsible for ensuring that their staff are trained in appropriate cleaning protocols for their work space, including cleaning high contact surfaces, benches, shared equipment, doorknobs and other common areas within their workspaces.

• All workers must complete the Safety and Risk Services COVID-19 training course.

• All workers are to complete an online Self-Assessment for COVID-19 daily before they enter the CHBE building.

• All workers are to use the online Check-In on arrival and Check out on departure from the CHBE building. The QR codes to access the online Self-Assessment and check-in/check-out system are provided at the building doors.

• All workers within CHBE spaces are required to follow health regulations and sanitation procedures, as detailed in the CHBE building safety plans, the child plans associated with this R2C, the updated CHBE Individual Faculty Return to Research Agreement, and the Hazard Elimination and Physical Distancing measures specified in Section 3 of this document.

• Workers have the right to refuse work, and should inform their supervisor or the Department Administration if they are choosing to exercise that right. The supervisor should then contact Safety and Risk Services and the Unit Manager responsible for safety (Samy Larkam). If the worker feels uncomfortable discussing this with their supervisor, they should contact the Department Head, their Local Safety Team or their representative on the Joint Occupational Health and Safety Committee (safetycommittees.ubc.ca).

8. Contact Number (Proposed COVID-19 Operations)

Describe the number of contacts in your proposed COVID-19 operational setting (# of people present in setting at same time)

• As mentioned above, in R2R Stage 2 and the R2C plan, the number of people in the building will be increased to no more than 2/3 of standard occupancy, with the maximum daily occupancy consistent with current physical distancing protocols. Physical distancing must be enforced and rooms must not exceed the posted maximum occupancy. To avoid risks associated with working alone, work areas (e.g. research and teaching laboratories) will have at least two people in them per work shift provided that there is sufficient space to allow for physical distancing. If working alone is unavoidable, the worker must follow the “Working Alone Procedure” found at http://chbe.sites.olt.ubc.ca/files/2014/12/Working-Alone.pdf, as well as the procedures outlined in the appropriate child plan.

• Maximum occupancy levels for each space/room within CHBE/CERC that can be accessed by approved personnel in the R2C are provided in Appendix C to this Intermediate Plan. These maxima are set to ensure physical distancing protocols are enforced at all times.

• Scheduling of each approved space will take place at the child plan level, with sign-in/out at the same level, to allow detailed tracing of those present.

• Should the Faculty of Applied Science adopt the QR code sign-in system on a faculty-wide basis, this system will be mandatory for those returning to campus under this plan.

9. Employee Input/Involvement
Detail how you have met the MANDATORY requirement to involve frontline workers, Joint Occupational Health and Safety Committees, and Supervisors in identifying risks and protocols as part of this plan.

This Intermediate Return to Campus plan was developed in consultation with Departmental faculty and staff, including front line staff and a cross-section of CHBE employee groups, via video-conference meetings and email exchanges held over the period of 27 July 2020 to 7 August 2020. Those consultations were conducted to enable stakeholders to raise questions and provide feedback that served to clarify procedures and strengthen the overall plan. The CHBE LST will review the plan either prior to submission or within 30 days of submission, and the plan will be revised as necessary.

10. Worker Health
Detail how all Supervisors have been notified on appropriate Workplace Health measures and support available and how they will communicate these to employees.

The responsibilities of Each Worker and worker Group permitted to return to campus are defined in Appendix D. In addition, Appendix E, which comprises the updated CHBE Building Safety Plan, details the Safety Training Plan currently in use in the department, as well as all policies and protocols that must be followed by each individual within CHBE-associated work spaces to ensure they and all other personnel in the building remain physically and mentally healthy.

Through that document and other official department correspondence, all departmental administrators, faculty and supervisors have been informed on appropriate Workplace Health measures and supports for staff mental and physical health, to be made available as they return to campus. Check-in’s and supports will also be made available via the following channels:
- Regular team meetings (virtual)
- Team email broadcasts
- JOHSC meetings & communications

Supervisors have also been encouraged to disseminate information from UBC Wellbeing.

11. Plan Publication
Describe how you will publish your plan ONLINE and post in HARD COPY at your workplace for employees and for others that may need to attend site.

Final plans will be posted to the following: APSC share point website, the CHBE and CERC websites. Additionally, hardcopies will be posted on the Department’s Health and Safety boards and in the main administrative offices of CHBE and CERC to ensure all returning worker have access to the plans, either physical or online.

In addition, CHBE’s Intermediate Plan, Building Safety plan and Table of Maximum Occupancy for each CHBE-affiliated space will be sent by email to all departmental and CERC staff, and also posted on the CHBE and CERC websites, and in the main administrative offices of CHBE and CERC.
**Section #3 – Hazard Elimination or Physical Distancing**

Coronavirus is transmitted through contaminated droplets that are spread by coughing or sneezing, or by contact with contaminated hands, surfaces or objects. UBC’s goal is to minimize COVID-19 transmission by following the safety hierarchy of controls in eliminating this risk, as below.

The following general practices shall be applied for all UBC buildings and workspaces:

- Where possible, workers are instructed to work from home.
- Anybody who has travelled internationally, been in contact with a clinically confirmed case of COVID-19 or is experiencing “flu like” symptoms must stay at home.
- All staff are aware that they must maintain a physical distance of at least 2 meters from each other at all times
- Do not touch your eyes/nose/mouth with unwashed hands
- When you sneeze or cough, cover your mouth and nose with a disposable tissue or the crease of your elbow, and then wash your hands
- All staff are aware of proper handwashing and sanitizing procedures for their workspace
- Supervisors and managers must ensure large events/gatherings (> 50 people in a single space) are avoided
- Management must ensure that all workers have access to dedicated onsite supervision at all times.
- All staff wearing non-medical masks are aware of the risks and limitations of the face covering they have chosen to wear or have been provided to protect against the transmission of COVID-19. See SRS website for further information.
Based in part on these general UBC guidelines, specific protocols all approved R2C personnel within CHBE/CERC must follow include:

- All workers coming to campus must take the Safety and Risk Services COVID-19 training and complete the CHBE quiz (https://ubc.ca1.qualtrics.com/jfe/form/SV_3Ji8FUkzff0QAd) and attach the SRS course certificate.
- The default work arrangement continues to be working remotely; returning to campus will open gradually, in a prioritized way.
- Permission to return to campus will only be granted to those who want to return and cannot effectively do their work from home, whether due to equipment or facilities needs, lack of a suitable space at home, or other individualized reasons.
- Being approved to be on campus generally does not mean a worker needs to be (or should be, if there is no need) on campus each day.
- Workers returning to campus will be assigned a priority level, and only those with the appropriate priority level may go to campus. Which priority levels have access to campus will change to both relax and tighten occupancy as directed by the Province and University.
- People in the following categories may not come to campus:
  - Those who have had COVID-19 symptoms in the last 14 days;
  - Those directed by a Public Health Authority or medical professional to self-isolate;
  - Those who have arrived from outside of BC in the last 14 days;
  - Those who have had contact with a confirmed COVID-19 case in the last 14 days.
- Workers are required to practice proper physical distancing and hygiene, as defined in more detail below.
- Community members who are not workers, such as students, shall be treated as workers for the purpose of the procedures in this document.

TRANSMISSION THROUGH CLOSE CONTACT

Transmission through close contact is to be mitigated in the following ways:

- Whenever possible, 2 m physical distancing will be maintained between all people. Each task will be assessed (informally or formally, depending on frequency of task, experience of person taking on task, and the degree of the hazard) to determine whether physical distancing can be maintained.
- Where possible, a need to work closely together will be eliminated by changing the task or using equipment designed to assist one worker in, for example, lifting.
- When physical distancing cannot be maintained or could easily be forgotten, a hazard and risk assessment will take place, and engineering controls (e.g. plexiglass barriers, tables), administrative controls (lines on the floor, wait here decals, stantions, etc.), and PPE will be considered, in that order.
- If working closely together is required, supervisors and workers should cooperate to create pairings that persist whenever working closely together is needed, so that workplace “bubbles” are kept to minimal size.
- Workers should wash their hands before and after working together closely, and should avoid touching their face. Cough or sneeze into your sleeve. Use hand sanitizer when washing is not possible.
- Details on distancing in hallways, corridors, and bathrooms are addressed in the Building Safety
Plans. Details on distancing in specific spaces are addressed in the Child plans.

MITIGATING TRANSMISSION THROUGH SURFACE CONTAMINATION

- Workers should wash their hands frequently throughout the day.
- Workspace surfaces should be cleaned using soap and water or an appropriate disinfectant before starting work and after completing work.
- If workspaces are shared, they should be cleaned regularly throughout the day.
- Frequently touched spaces within a shared space, such as doorknobs and light switches, should be cleaned at least once per day.
- Kitchen facilities (shared refrigerators, coffee machines, microwaves, etc.) remain closed.
- Cleaning of washrooms, floors, and other areas normally cleaned by custodial services will continue to be cleaned by building custodians (http://buildingoperations.ubc.ca/2020/05/25/custodial-services-keeping-your-facility-clean-andsanitized/).

These and future guidelines provided by the APSC Safety Team (Appendix F) must be followed at all times during this R2C period.

12. Work from Home/Remote Work

Detail how/which workers can/will continue to work from home (WFH); this is required where it is feasible

- All work which can be done off-campus must continue to be done off-campus, i.e. data processing, writing manuscripts, writing grant proposals, preparing lecture materials, creating presentations, studying, ordering of supplies, online library research, computations, etc. should be done from home.
- Exceptions may be considered for cases where personnel do not have the possibility to work from home. Prioritization of CHBE and CERC work activities will be determined by the CHBE LST, with final approval granted by the CHBE Head following consultation with the CERC Director when appropriate.
- UBC’s President’s Office presented the following five activities as top priorities:
  1. Academic/Research resumption
  2. Services directly supporting the resumption of research, teaching and learning (i.e. technicians, Shops, CIS, TAs for onsite filming of course materials, etc.)
  3. Revenue generating units
  4. University ancillary services
  5. Administrative units
- Equity and mental health concerns for personnel who cannot work remotely will be considered and prioritized by the CHBE Head/CERC Director.
- Faculty teaching for whom conditions make it impossible to provide classes from home can apply to use their office for lectures; approval is decided by the Department Head.
• Faculty requiring access to on-campus space to prepare materials for Fall Term 1 (e.g. making videos for online course production) should be accommodated where possible as long as it will be done in a safe manner consistent with physical distancing requirements.

• Training of new personnel (undergraduates, graduate students, postdoctoral fellows, teaching assistants, research associates, etc.) is permitted. When training is required that cannot be performed with physical distancing, then personnel must follow the Faculty of Applied Science safety regulations for in-person training activities.

• In-person study halls and office hours cannot be organized at this time. One-on-one and group meetings among PI’s and research personnel should be conducted in a virtual format.

• Everyone must continue to meet online whenever possible.
  o Small in-person meetings that are essential (e.g., training that cannot be completed online) will be permitted as long as physical distancing is maintained. This will require meeting participants to be spaced by at least 2 m in the classroom and meet all of the requirements outlined in the SRS UBC Employees COVID-19 Essential In-person Meetings/Trainings Guidance.
  o Units requesting to do this will be required to submit a plan for the room layout for approval by Department Head/School Director.

• Where exemptions have been given for a faculty or staff member to access their office, they must not have guests in the office at this time.

• Individual faculty members are responsible for developing plans for their own research spaces. These will be reviewed and approved by Department Heads/School Directors. Heads and Directors are encouraged to consult with their LST.
  o Amendments from R2R Stage 1 plans must be made to transition to R2R Stage 2 allowances for increased capacity.

• Non-essential business/research travel is not permitted at this time, but will be revisited in future Stages.

• Field work will be reviewed and approved on a case-by-case basis by the Department Head/School Director.

13. Work Schedule Changes/Creation of Work Pods or Crews or Cohorts
For those required/wanting to resume work at UBC, detail how you are able to rescheduling of workers (e.g. shifted start/end times) in order to limit contact intensity; describe how you may group employees semi-permanently to limit exposure, where necessary

Shift Work: The CHBE Department will adhere to UBC Return to Campus rules for shift-work scheduling (M-F 7:00 am – 7:00 pm conducted as either a single shift or in two shifts with a 1-hr break between) to ensure custodial staff can clean required spaces. Any supervisor/manager wanting their personnel to work on a two shifts per day basis will need to make a request through the CHBE Administrator, Marlene Chow. It may not be possible to accommodate all such requests. All personnel must abide by the Department’s working-alone policy (http://chbe.sites.olt.ubc.ca/files/2014/12/Working-Alone.pdf), as well as the procedures outlined in the appropriate child plan to ensure that there are regular checks.
Weekend Work:
In this R2C, weekend work in the form of a single shift on Saturday from 8:00 am to 7:00 pm is allowed, so as long as it does not conflict with delivery of custodial services. When weekend work is scheduled, the Department will ensure the Building Administrator/Facility Manager has first confirmed that custodians are given sufficient time and space to complete their work.

The protocol for work on a Saturday between 8:00 pm – 7:00 am will be as follows:
1. The PI/Faculty member/Supervisor must notify the Department Head and Building Administrator (Marlene Chow) of their planned work no less than 3 workdays prior to the day of the planned weekend work.
2. The Building Administrator will notify security ahead of the scheduled date regarding who will be working extended hours (including time, date, and location) so that they can be given access if they forget or misplace their access card.
3. The PI/faculty member/ supervisor will post notice on the door of their lab/office/workspace that weekend work is underway, indicating name(s) and scheduled working hours of the personnel present.

Medium-to-High Risk Work: CHBE has prepared a Return to Research plan that is expected to exclude any work that might be deemed a High-Risk by SRS. However, where medium-to-high risk work is conducted (e.g. potentially hazardous laboratory experiments), the work will be scheduled M-F, one monitor (typically a faculty member, but maybe another responsible person like a health and safety officer) must be present each day of that work (9:00 am - 5:00 pm), and this must be broadcast to everyone in the unit. The monitor must be available in case of emergency or other questions, and should help to ensure that the restrictions are being observed.

Scheduling Responsibilities:
- CHBE will maintain a schedule for and the contact information of responsible person present during every shift.
- CHBE will ensure scheduling of shared rooms (via PI or office admin safety plans) is performed in each building.

Describe or use UBC building keyplans (or do both, where appropriate) to identify and list the rooms and maximum occupancy for each workspace/area, explaining your methodology for determining occupancy

The CHBE Department has administrative control over the CHBE Building, the Clean Energy Research Centre (CERC), and the UBC Gas-Gun Facility (GGF) and this Intermediate plan applies to all workspaces within those buildings.

Any individual scheduled to come to CHBE or its associated research spaces (CERC and GGF) must:
• Self-monitor their health status using the CHBE BC Health Self-Assessment. If healthy, record that they self-monitored their health status via the logbook provided by the faculty supervisor (see policy 6)
• Use the online CHBE Check-in on arrival and Check out on departure.

The temperature and any abnormal symptoms of the individual must be assessed prior to arrival. COVID-19 affects different people in different ways. Most infected people will develop mild to moderate illness and recover without hospitalization. Covid-19 coronavirus symptoms according to WHO include:

Common symptoms:
• fever
• dry cough
• tiredness

Less common symptoms include:
• aches and pains
• sore throat
• diarrhea
• conjunctivitis
• headache
• loss of taste or smell
• a rash on skin, or discoloration of fingers or toes

Serious symptoms include:
• difficulty breathing or shortness of breath
• chest pain or pressure
• loss of speech or movement

Anyone experiencing any of these symptoms must use the CHBE BC Health Self-Assessment tool to determine if further testing or medical care is required. No one with symptoms should leave their home. If symptoms develop while at work, individuals are to leave immediately for home to self-isolate, monitor symptoms and/or seek medical attention in accordance with Public Health directives. Return to work only after the mandated self-quarantine period is complete and all symptoms resolve.

The Faculty of Applied Science Dean’s Office has recommending all the units to use a QR code for check-in/out of the building in order to ensure the occupancy level is respected as well as the COVID-19 self-assessment is done before entering a building. It will consist of:
  o One QR code for sign in: to capture name, date and time of the person going in the building and the self-assessment for COVID-19 symptoms will also be imbedded in this survey as well
  o Another QR code for sign out which includes only name, date and time of the person going out the building * There may be reason for exemptions to accommodate systems for shared buildings.
The CHBE operations are in compliance with these recommendations and all workers are required to follow the instructions.

Finally, assigned Floor Wardens within CHBE, CERC and the GGF will complete compliance checks (can be random) to ensure the posted maximum room occupancies are not exceeded and all Health and Safety protocols are being followed.

**Laboratory/Office Considerations**

Occupancy limits ([Appendix C](#)) will also be posted on the door of each room by the PI or office administrator.

**Building/Facility Considerations**

Common areas (lunchrooms, lounges, study space, admin, teaching spaces, bathrooms, elevators)

- All rooms will be sign-posted with the maximum occupancy based on available floor space to allow for 2m physical distancing.
- Busy or tight stairwells will be marked for ascending or descending between floors (this will not apply in an emergency, such as a fire).
- Elevators should only be used for heavy loads and accessibility needs; limited to either 1 or 2 occupants, based on elevator size, with appropriate signage.
- Tape or markings will be displayed on the ground to indicate where workers should stand while lining up to enter the elevator. Ensure adequate space is provided for those exiting the elevator.
- Where kitchens or lunchrooms are open, a hand washing station (i.e. sink) must be available; Personnel must bring their own dishes.
- When common office machines or appliances are used (e.g., copier, microwave, refrigerator, kettles) they must be wiped down by the user with disinfectant prior to and following use.
- Chairs and desks in lunchrooms / lounges / study spaces / administration areas (e.g., main office) must be spaced far enough apart to allow for physical distancing.
- Where possible, doors to multi-person washrooms should be propped open to minimize high touch surfaces and maximize air flow. Where possible, only one person should use the washroom at a time. Occupied/unoccupied door signage should be used or light on/off system must be indicated.
- Main offices may be open where necessary to support research and teaching, but the number of people working should be very limited and always accommodating physical distancing.
- Where a feature/service leads to formation of a line-up (e.g., coffee machine, machine shops, access to Stores), markings spaced 2m apart should be on the floor.
- Individuals choosing to wear non-medical face masks or face coverings in common areas or labs must understand the risks and limitations of such masks, and that they don’t replace physical distancing. UBC [Safety and Risk Services (SRS) states](#) that: “Departments or units that
choose to provide non-medical masks or face coverings to UBC Members (faculty, staff or students) must inform the recipients of the risks and limitations of non-medical mask usage.”

**Points of Access to Building and Access Control**
- Access to the buildings is provided using key cards and the buildings will remain locked until further notice. The now designated ‘exit doors only’ should have their fob deactivated by UBC Secure Access to prevent entry through these doors.
- To minimize high touch surfaces, interior doors that can be safely propped open without violating fire codes, should be propped open.

**Department-Managed Undergraduate / Graduate Learning and Teaching Spaces**
- Classrooms and meeting rooms can be open for specific events provided that a safety plan (with posted room occupancy) has been developed.

**UBC-Managed Undergraduate / Graduate Learning and Teaching Spaces**
- Before entering one of the UBC-managed rooms, [Department/School] personnel must read the [COVID-19 Safety Plan for General Teaching Spaces](#).
- In addition to all of the policies stated in the document, all high touch surfaces must be cleaned both before and after use.

**Signage and Directional Guides**
- Elevators (maximum of either 1 or 2 occupants, based on elevator size).
- Stairwells that are busy or very tight (for directionality).
- Physical distancing signage must be posted at entrances and/or hallways.
- Narrow hallways should be designated one-way with appropriate signage on the floor and at eye level.
- There must be a Worker/Visitor Entry Check sign at every entrance that describes the symptoms of COVID-19 and other self-declaration items, and prohibits entry for any personnel that may meet one of the three criteria.
- Post signage within the units to inform of the measures in place.

**Hand Sanitizer Stations**
- Hand washing/sanitizing stations should be considered inside of building entrances, subject to availability.
- Hand sanitizers should be considered near the entrance to all shared labs/multi-user facilities (to be provided by PI or facility manager), subject to availability.
- Hand sanitizing stations should be considered at locations where propping the doors interferes with a building’s airflow/temp stability subject to availability.

**Offices**
• Single occupancy office space is to be used only in the case of special exemptions awarded by the Department Head/CERC Director.
• Temporary short access to offices (e.g. 10 minutes for grabbing a book) will be provided by Head/Director’s approval on a case-by-case basis.
• Use of graduate student/trainee offices can be allowed, but must accommodate physical distancing protocol. Priority will be given to offices that are required for teaching purposes.

Shared Facilities

• Access to some facilities within CHBE will be restricted and inaccessible to the general populations (e.g., machine shop). Other areas (e.g. Stores, autoclave, etc) require online scheduling using the CHBE MRBS system.
• CHBE and CERC also house a variety of shared research and teaching spaces, including but not limited to teaching laboratories, classrooms, the CERC High-Headspace Lab, shared instrument and analytical equipment rooms, etc. The protocols and additional procedures for using these spaces that are enumerated in the CHBE Building Safety Plan must be followed by all users.
• All shared tools, computer keyboards, and other high-contact areas must be wiped down with disinfectant prior to and following use. UV disinfecting lights, where available, must be used as directed.
• If required, visits to the workplace to deliver samples (e.g., industrial partners) should be prearranged, staggered, and safety protocols should be communicated before entry into the workplace (e.g., email and/or signage posted to entrance). Keep a record of visitors to the workplace.
• Users MUST comply with procedures or access/services will be denied.
• Additional information and requirements for accessing and using shared spaces is provided in Appendix G.

15. Accommodations to maintain 2 metre distance
Please detail what accommodations/changes you have made to ensure employees can successfully follow the rule of distancing at least 2 metres from another employee while working

Common Physical Distancing Protocols (Everyone)

• Physical distancing is required at all times with personnel spaced by at least 2 m. Where physical distancing is not possible, then UBC the UBC Employee COVID-19 Physical Distancing Guidance should be followed. Examples include carrying something heavy or doing repairs to an equipment that require two people. The personnel must contact SRS for guidance on appropriate PPE where physical distancing cannot be maintained.
• No unapproved personnel or visitors are permitted in the buildings until further notice, including relatives (e.g., parents, children) or friends of approved personnel. Exceptions include: couriers, industry representatives dropping off samples for analysis, other researchers or technicians on campus accessing equipment.
• All elevators are limited to either one or two occupants (based on elevator size).
• When stairwells are not sufficiently wide to allow for cross-directional traffic with appropriate physical distancing, they will be clearly marked as single-direction. Follow directions in buildings. No passing in stairwells is permitted.
• Use of non-medical masks is guided by BC Health guidelines. Medical masks are not currently required unless the particular task required them pre-COVID. Personnel who choose to wear masks must still comply with physical distancing requirements. Those who wear masks must wash and dispose of them properly. Use of other PPE, such as lab coats and eye protection, should follow UBC ‘Safety and Risk Services’ (SRS) Guidelines, linked [here](#).
• Department-bookable classrooms can be reopened in R2R Stage 2 & R2C.
• Use of common rooms (e.g., locally-assigned classrooms and meeting rooms, social spaces, lunch rooms) will be controlled by the CHBE Administrator, Marlene Chow. Where required, chairs will be removed from common rooms to limit the number of people who can sit in accordance with physical distancing standards
  o Specified spaces for eating and breaks (CHBE atrium) have signage to indicate the maximum number of people permitted at a time while maintaining physical distancing. Eating or taking of breaks outside is recommended. CHBE/CERC kitchens/lunchrooms should not be used.

16. Transportation
Detail how you are able to (or not) apply UBC’s COVID-19 vehicle usage guidelines to the proposed operational model - if you cannot apply these guidelines, please describe alternative control measures

All supervisors/managers and Departments will adhere to the [UBC Employee COVID-19 Use of UBC Vehicles Guidance](#), including only one person per vehicle unless there is space to allow physical distancing.

CHBE owns one truck that is bookable and one forklift used only by certified technical staff. The SRS Cleaning protocol between users must be adhered to when the vehicles are used.

17. Worker Screening
Describe how you will screen workers: 1) exhibiting symptoms of the common cold, influenza or gastrointestinal; 2) to ensure self-isolation if returning to Canada from international travel; and 3) to ensure self-isolation if clinical or confirmed COVID-19 case in household or as medically advised

• Every Department/School will ensure that the check-in & check-out QR code (provided by the Dean’s Office) is posted on the entrance doors of each APSC building (where possible). The survey will have the questions from [Thrive BC Self-Assessment Tool](#).
• Additionally, the CHBE Department will designate a person to do daily spot checks on the survey database and prohibit people who are scheduled in the building, but are not completing the survey. This person will also ensure that international travellers are not scheduled in the building and have not entered the building during 14 days after their arrival to Canada.
• Every person (employee, visitor, contractor, etc.) returning on campus (also the employees working remotely) will do the [SRS training](#) and provide their certificate.
o To complete the SRS training, if the person does not have a CWL, a temporary one can be hosted by the Department/School/Unit through UBC IT.

o Before coming to work, all personnel must check their health status.
  ▪ Personnel experiencing any symptoms of COVID-19 (cough, sneezing, shortness of breath, loss of sense of smell/taste, sore throat, tiredness, fever) must not come to work.

o Individuals displaying symptoms of COVID-19 must remain at home and isolated until they have been confirmed COVID-free by testing or have been symptom free for the length of time recommended by the BCCDC.
  ▪ Personnel who have been in contact with a person confirmed or presumed to have COVID-19 must also self-isolate as per provincial health guidelines. Personnel will be referred to the BC Health Self-Assessment Tool to determine if they require testing and/or medical care.

o Anyone returning from outside of Canada must follow the directions of the quarantine act, which specifies 14 days of self-isolation, regardless of whether or not they are experiencing COVID-19 symptoms.
  ▪ Anyone exposed to a traveler must also self-isolate for 14 days. Supervisors cannot give personnel in quarantine work that would require them to break the quarantine.

• Every front and back entry door will include signage for both workers and visitors/guests that prohibits entry if any of the above criteria apply. The signage will either copy, or will directly use the WorkSafeBC signage, as below:
  a. WorkSafe: Entry Check for Workers
  b. WorkSafe: Entry Check for Visitors

18. Prohibited Worker Tracking
Describe how you will track and communicate with workers who meet categories above for worker screenings

The QR code Qualtrics survey database will have the information if someone who tried to access a building has COVID-19 symptoms. These workers will inform their supervisors by email and will decide if they want to take a sick day or work remotely if possible. If they decide to take a sick day, they will enter that request onto the PAT system.

Section #4 – Engineering Controls

19. Cleaning and Hygiene
Detail your cleaning and hygiene plan, including identification for hand-washing stations and the cleaning regimen required to be completed by your Departmental/School staff (i.e. non-Building Operations) for common areas/surfaces
• Personnel must wash their hands regularly and avoid contact with one another.
  o Hand washing/sanitizing stations should be considered inside of building entrances, at locations near shared spaces, and at locations where propping the doors interferes with a building’s airflow/temp stability, subject to availability.
• The standard UBC custodial standards will apply. Custodial crews will clean the common areas of buildings outside of operation hours (after 7 PM).
  o If there is any additional required cleaning (e.g. high-touch surfaces) the protocols and cleaning solutions must be provided. Any laboratory cleaning will follow the WHO guidelines for decontamination.
• If microwaves or other cooking equipment are being used, there must be signage to reinforce cleaning protocols (e.g., users disinfecting the handles and buttons) and there must be supplies available there for this purpose.

20. Equipment Removal/Sanitation
Detail your appropriate removal of unnecessary tools/equipment/access to areas and/or adequate sanitation for items that must be shared that may elevate risk of transmission, such as coffee makers, kettles, shared dishes and utensils

• Food preparation within the building is not encouraged.
• Building Safety plans developed by each department/unit will highlight the equipment removal/ sanitation procedures for common areas of their building. The guideline given to the Individual users will be to disinfect every common surfaces inside a room (e.g., fridge handles, solvent containers, mice on lab computers
• Each workspace plan developed by faculty/supervisors will highlight the equipment removal/ sanitation procedures for their specific spaces.
• Cleaning schedules will be generated by supervisors/managers for all high-touch items, such as shared equipment. For all new cleaning protocols, training regarding the protocols and cleaning solutions must be provided. Cleaning protocols will follow the WHO guidelines for decontamination & Health Canada guidelines.

21. Partitions or Plexiglass Installation
Describe any inclusion of physical barriers to be used at public-facing or point-of-service areas

Need for partitions or plexiglass installation must be addressed within each Child plan and approved by the CHBE LST and CHBE Head. Wherever possible, movable plexiglass barriers should be installed, particularly on counters where personnel must interact with customers or other people (e.g. deliveries).

Section #5 – Administrative Controls

22. Communication Strategy for Employees
Describe how you have or will communicate the risk of exposure to COVID-19 in the workplace to your employee, the conduct expectations for the employee's physical return to work around personal hygiene (including use of non-medical masks), the familiarization to contents of this plan, including
how employees may raise concerns and how you will address these, and how you will document all of
this information exchange

**Communication of the Plan to CHBE and CERC Personnel**

- To communicate the risk of exposure to COVID-19 in the workplace to the employees and
departmental personnel, the CHBE Department will disseminate this Intermediate Level plan
via e-mail and will post it on the CHBE and CERC websites.
- A meeting will be held with Departmental Head, CERC Director, faculty and staff to discuss
their roles and responsibilities. Once approved, the Intermediate and Child plans will be
distributed by email and stored on a centralized SharePoint site for record keeping purposes.

**Communication of Worker’s Concerns**

- When an employee is concerned about any of these policies, they should follow the standard
WorkSafeBC reporting guidelines (see Right to Refuse Unsafe Work).
- They may also contact their worker representative of the APSC JOHSC to express their
concerns.

**23. Training Strategy for Employees**

Detail how you will mandate, track and confirm that all employees successfully complete the
*Preventing COVID-19 Infection in the Workplace* online training; further detail how you will confirm
employee orientation to your specific safety plan

- The SRS *Preventing COVID-19 Infection in the Workplace* online training course is mandatory
for all employees (including those who remain working remotely).
- The SRS course link, the ‘Return to Campus Activity Commitment Form’ (please see Appendix
H) as well as a list of all documents required for reading ahead of returning to campus (i.e.
building safety plans, and their specific Workspace safety plans) must be sent by email to all
workers.
- A copy of the completed course certificate and a signed ‘Return to Campus Activity
Commitment Form’ must be returned to the Department/School designate. Forms are to be
submitted using a CHBE Qualtrics. In addition, the HR Administrators (Kelly Tan, Marlene
Chow) may run a 910 report in MSP to view which employees in their department have
completed all mandatory training courses.

**24. Signage**

Detail the type of signage you will utilize and how it will be placed (e.g. floor decals denoting one-way
walkways and doors)

The CHBE Department will utilize the signage from the Safety & Risk Services COVID-19 website, and
the WorkSafe’s COVID-19 – Resources website, WorkSafe BC, and from Building Operations to direct
personnel within CHBE and CERC.

**Posted signage and barriers will include:**

- Signs that state the maximum occupancy of common rooms
- Use of tape to block-off rooms and classrooms that are off-limits
- Use of tape and floor signage to direct traffic through high flow areas
- Signs to remind people to adhere to physical distancing guidelines
• Floor signs to mark off 2 m spaces where people might line up (if needed)
• Signed Access Agreement on lab doors indicating maximum occupancy

Checklists of items that require disinfection at the end of each shift. These should include switches, freezer / fridge handles, keyboards and mice of communal computers, cart handles, etc.

25. Emergency Procedures
Recognizing limitations on staffing that may affect execution of emergency procedures, detail your strategy to amend your emergency response plan procedures during COVID-19. Also describe your approach to handling potential COVID-19 incidents.

All of the BERPs within the CHBE Department have been updated to accommodate the reduced staffing levels.

When the designated Fire Wardens are not scheduled to work, all ‘Responsible Persons’ will be certified Fire Wardens and will be responsible for BERP protocols. They will also have access to lists of the research personnel and laboratory rooms that are occupied each day. A comprehensive document that provides safety and emergency contacts as well as an emergency response plan will be publicly available both online and as a hard copy. Amended BERPs will be provided, where necessary, as part of CHBE site-specific safety planning.

Describe how monitor your workplace and update your plans as needed; detail how employees can raise safety concerns (e.g. via the JOHSC or Supervisor) - plan must remain valid and updated for next 12-18 months.

The LST will include in their regular meetings, CHBE/CERC/GGF COVID-19 to review any new concerns or issues raised. Supervisors will also be encouraged to include the topic in their regular staff meetings and to encourage their staff to contact the Safety and Technical Coordinator, Samy Larkam, with any concerns.

27. Addressing Risks from Previous Closure
Describe how you will address the following since the closure: staff changes/turnover; worker roles change; any new necessary training (e.g. new protocols); and training on new equipment.

If a change to the worker role becomes necessary for continued operation, training in the new protocols of the job will be conducted, including full documentation of the training.

If the worker role changes, the details will be included through amendment of either the PI or office admin site-specific safety plan.

Section #6 – Personal Protective Equipment (PPE)

28. Personal Protective Equipment
Describe what appropriate PPE you will utilize and how you will/continue to procure the PPE.
CHBE stores has an inventory of PPE and non-medical masks available onsite. The inventory is replenished routinely and as new PPE suggestions arise, the items are ordered. In addition, CHBE Stores has sources and laundry service to clean lab coats.

Section #7 - Acknowledgement

29. Acknowledgement
Plan must demonstrate approval by Administrative Head of Unit, confirming: 1) The Safety Plan will be shared with staff and how; 2) Staff will acknowledged receipt and will comply with the Safety Plan, and 3) How any relevant updates or amendments to the plan will be communicated to the staff within the unit.

The final version of this Intermediate Plan will be signed by the Head of CHBE, Charles Haynes, and further approved by the Dean of the Faculty of Applied Science, James Olson. It will be distributed to all Departmental/School faculty and staff, the unit’s LST and the Faculty of Applied Science’s JOHSC. It will also be posted on the Departmental/Unit website. If the plan is amended or updates, impacted staff and/or faculty will be informed by email.

Administrative Head of Unit Signature: 
Date: 11 August 2020

Dean, Faculty of Applied Science Signature: _____________________________
Date: ___________________________
Appendix A – Approval Process Flow Charts

Table 1 – Intermediate Plan Approval Flow Chart

Table 2 – Child Plan Approval Flow Chart
Appendix B – Working On-Campus Decision-Tree

- Worker can effectively work at home
  - Yes: No Return to Campus
  - No: Worker approved in return to research stage 1 or research exemption
- Worker approved in return to research stage 1 or research exemption
  - Yes: Priority 1 access
  - No: Worker needing to return for teaching/research/continuity or to access specialized infrastructure
- Worker needing to return for teaching/research/continuity or to access specialized infrastructure
  - Yes: Priority 2 access
  - No: Worker returning to support critical operational activities (i.e., maintenance, technical staff, etc.)
- Worker returning to support critical operational activities (i.e., maintenance, technical staff, etc.)
  - Yes: Priority 3 Access
  - No: Worker has home conditions which are not suitable for remote work
- Worker has home conditions which are not suitable for remote work
  - Yes: Priority 4 Access
  - No: Students needing access to specialized labs to complete project work
- Students needing access to specialized labs to complete project work
  - Yes: Priority 5 Access
  - No: Approved student group doing critical path work
- Approved student group doing critical path work
  - Yes: Speak with Unit Head/Director
  - No: Worker requiring limited time access for a defined period of time
- Worker requiring limited time access for a defined period of time
  - Yes: No Return to Campus
  - No: Does worker really need to return to campus?
- Does worker really need to return to campus?
  - Yes: No Return to Campus
  - No: No Return to Campus
Appendix C – Maximum Occupancy Levels

Maximum occupancy levels for each space/room within CHBE/CERC that can be accessed by approved personnel in the R2C are provided in the table below. Note that these maximum values may be change in response to changes in university or government policies.

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<th>Room</th>
<th>SQM</th>
<th>Description</th>
<th>RTC Capacity</th>
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Appendix D – Responsibilities of Each Worker Group

Employee Responsibilities

- Must take the required UBC COVID-specific training course.
- Before coming to work, all personnel must check their health status. Personnel experiencing any symptoms of COVID-19 (cough, sneezing, shortness of breath, loss of sense of smell/taste, sore throat, tiredness, fever) must not come on campus.
- Individuals displaying symptoms of COVID-19 (described above) must remain at home and isolated until they have been confirmed COVID-free by testing or have been symptom free for the length of time recommended by the BCCDC. Personnel who have been in contact with a person confirmed or presumed to have COVID-19 must also self-isolate as per provincial health guidelines. Personnel will be referred to the BC Health Self-Assessment tool to determine if they require testing and/or medical care: https://bc.thrive.health/.
- All work that can be done off campus must continue to be done off campus. Data processing, writing manuscripts, writing grant proposals, creating presentations, studying, ordering of lab supplies, online library research, computations, etc. should be done from home. Exceptions may be considered for cases where research personnel do not have the possibility to work from home.
- Faculty who are teaching for whom conditions make it impossible to provide classes from home can apply to use their office for lectures; approval is decided by their head/director.
- Faculty who require access to on-campus space to prepare materials for the fall (e.g., making videos for online course production) should be accommodated by the head/director where possible as long as it will be done in a safe manner consistent with physical distancing requirements.
- Training of new research protocols is strictly limited to situations where physically distancing can be maintained. This assessment will be up to PIs.
- In-person meetings, events or lectures should not be organized in R2R Stage 2 & R2C unless they have received approval from Heads/Directors and the Dean, APSC.
- Where exemptions have been given for an employee to access their office, they must not have guests in the office.
- Supervisors/managers will be responsible for developing safety plans for their spaces. These will be reviewed and approved by department heads / directors. Heads and directors are encouraged to consult with their LST and/or JOHSC.
- Prioritization of personnel within a work location will be determined by the supervisor/manager and approved by the head or director.
- When an employee is concerned about the rules for R2R Stage 2 & R2C, they should follow the standard WorkSafeBC reporting guidelines (address the concern in writing to their supervisor first).

Responsibility of Faculty of Applied Science

- Develop Parent Plan for R2C.
Develop application and approval process to restart activities on campus.
Evaluate and approve applications.
Develop guidelines and requirements for R2C in accordance with UBC and Provincial guidelines.
Disseminate training and support resources and templates as received from VPRI and SRS to Principal Investigators, researchers, unit leadership, managers, and supervisors.
Monitor overall compliance and, if necessary, impose penalties or revoke permission to operate.
Coordinate with VPRI to ensure activities are consistent with overall UBC guidelines.

Responsibility of Department Heads and Directors
- Ensure that the Parent Plan is shared with faculty, students, and other researchers in their unit.
- Approve Building Safety Plans developed by the Departmental Safety Committee (LST).
- Ensure shared facilities are managed collaboratively.
  - Safety personnel and facilities managers will coordinate across Faculties, Departments, Schools, and units where necessary to develop comprehensive, collaborative and accurate Building Safety Plans.
  - They are also responsible for reporting back to Heads/Directors.
- Approve Workspace Safety Plans reviewed by LST.
- Ensure that all employees receive safety training.
- Develop plan to monitor compliance for their unit in conjunction with their Safety Team Representative ("STR" – faculty and/or staff on the Unit’s LST who work with APSC’s Joint Occupational Health & Safety Committee (JOHSC): see list of STRs in Appendix F).
- Responsible for ensuring that all required signage is in place throughout the common spaces of the building.
- Handle conflicts from their unit and report issues to the RTCC.

Responsibility of Supervisors and Managers
- Responsible for developing a site-specific safety plan for their space, and communicating this to all personnel. This will be reviewed and approved by department heads or directors prior to restarting work.
- Responsible for ensuring that their personnel take the mandatory UBC COVID-specific training course, as well as taking it themselves.
- Responsible for posting on the doors to their work areas the maximum number of occupants. Where a workspace is shared by multiple groups, this maximum occupancy must be agreed upon by all supervisors/managers. In the event that it is not agreed upon, then the head or director can impose a limit.
- Responsible for scheduling shifts / rotations of personnel as needed to ensure that physical distancing can be practiced and to respect occupancy limits depending on the current stage of the R2C process. Where a workspace is shared by multiple groups, this schedule must be agreed upon. In the event that it is not agreed upon, then the head or director can decide the schedule.
• Employees may not have the same comfort level or ability to return to work and anyone can choose to defer their return to on-campus work, at their own discretion. Supervisors have a duty to recognize and accommodate each situation individually.
• Ensure the availability all necessary PPE.
• Monitor compliance with Safety Plan for all employees and visitors under their supervision
• Ensure there is sufficient availability of PPE and other safety equipment in order to implement the Safety Plan.
Appendix E – CHBE Building Safety Plan

This Safety Plan for the Return to Campus process within the CHBE Building and CHBE-associated buildings including the Clean Energy Research Centre (CERC), and the Gas-Gun Facility (GGF), is comprised of a set of departmental policies, procedures and guidelines based on a continued need to minimize time spent in the building and to work remotely whenever possible. In addition to defining building operations, it specifies the responsibilities of Faculty Members and research Lab Staff and Students. The Plan is an amendment of the previously approved CHBE Building Safety Plan for the Stage I Resumption of Research Activities.

The Safety Plan was prepared the CHBE Department Head (Charles Haynes) and the Chair of the CHBE Local Safety Team (Marlene Chow). Based on guidance from James Olson, Dean of APSC, it is expected the Return to Campus activities within CHBE, including research operations, will not exceed 66% of our level of operations prior to the temporary limiting of on-campus activities instituted in late March 2020. This document reflects current government and UBC guidelines in response to the pandemic as specified at https://covid19.ubc.ca/. Establishment of maximum room and building occupancies per day during this R2C operational period is therefore based on maintaining personal distancing requirements (2 m), and this supersedes the university allowance for 66% building occupancy relative to our level of operations prior to the temporary limiting of on-campus activities instituted in late March 2020.

**Department**
Chemical and Biological Engineering

**Name of Buildings**
Chemical and Biological Engineering and Clean Energy Research Centre (CERC)
2360 East Mall

Gas Gun Facility (GGF)
6301 Stadium Rd

**CHBE-Associated Research Building:**

Gas Gun Facility
Introduction and Description of CHBE Working Space

Operations within the UBC Department of Chemical and Biological Engineering (CHBE) are primarily conducted within the Chemical and Biological Engineering Building, the Clean Energy Research Centre (CERC), the UBC Pulp and Paper Centre which houses the BioProducts Institute (PPC/BPI), the UBC Gas Gun Facility (GGF), and temporary laboratory spaces (Rojas, Foster, Cranston) in the Wesbrook building (WES). The CHBE Building, including CERC, houses research laboratories and shared research infrastructure, administrative offices, a public atrium and other common spaces (lunchroom, restrooms, etc.), and a number of classrooms, meeting rooms and club rooms. The GGF is comprised of an office connected to a small open laboratory space. The safety plan defined here provides policies and guidelines all CHBE-associated personnel must follow as well as specific plans for operations within the main CHBE building, CERC and the GGF. Safe operations within the PPC (and affiliated BPI) are overseen by the PPC Administration and its Local Safety Team.

The central purpose of this plan is to appropriately limit and manage the number of people in the CHBE building, CERC and GGF, including common areas, workspaces, research labs, teaching facilities, and administrative and technical offices at all times so as to establish a safe working environment, including maintaining physical distancing guidelines mandated by the Province and UBC. The COVID-19 virus will remain a serious concern for several months, and thus all CHBE-associated personnel approved to enter the CHBE building or CHBE-associated research spaces must adopt habits that allow us to perform work within our building, associated research spaces, laboratories, stores and workshops while mitigating the risk of acquiring and spreading the virus. This operations plan for a safe return to on-campus activities (R2C) is comprised of a set of policies and procedures based on a continued need to minimize time spent on campus and to work remotely whenever possible. It has been created through leadership provided by the APSC Dean’s Office, the Department Head (Charles Haynes), and the CHBE Local Safety Team (LST), co-chaired by Marlene Chow and Savvas Hatzikiriakos and populated by representatives of all major worker classes within our departmental enterprise (UG and Graduate Students, Lab Managers, Staff, Faculty, APSC representatives, etc.) to ensure that the LST includes their needs and concerns in the safety protocol planning process.

Reference Documents

The following guidance documents and resources UBC Safety & Risk Services COVID-19 Website were used in the development of this plan:

- Prevention, Working Safely on Campus including
  - Personal Protective Equipment
  - Using Non-Medical Masks
  - UBC Employee COVID-10 Guidance document,
  - Risk Assessment and Safe Work Procedure
  - Essential in Person Training and Guidance
- BC CDC website on masks, physical distancing and other practices.
- WorkSafeBC Covid-19 Information
- UBC Building Services provides custodial services and their procedures are outlined online.
General Policies

The specific safety and operations policies and procedures defined below are based on and supplement the Provincial and university guidance provided in the documents identified above. Together, these policies and procedures are intended to promote safe working conditions through reduced building occupancy, physical distancing, pedestrian trafficking, surface cleaning and personal hygiene. No one may enter or work in the CHBE building or its associated research spaces (CERC and GGF) without the express written permission of their immediate supervisor(s), the Department Head (Charles Haynes), the CHBE LST, and the CERC Director (Xiaotao Bi) as applicable. In this R2C operational period, the CHBE building and associated research, teaching and office spaces (CERC and GGF) will be open to CHBE personnel and support staff from **7:00 AM to 7:00 PM Monday to Friday** on a limited-capacity and limited-activity basis, with two work shifts (**7 am to Noon, and 1 pm to 7 pm**) available each weekday. In addition, these spaces will also be open on most Saturdays in the form of a single work shift from **7 am to 7 pm**, subject to approval by the Department Head. To gain approval for you and your indicated personnel to Return to Campus during the R2C operational period, the PI must do the following:

1. A **Covid-19 “Child” Workspace Safety Plan** must be prepared and submitted by the Principal Investigator that includes relevant workspace information, a description of intended operations and a risk assessment of them, the procedures and policies that will be adopted to mitigate those risks, including clear plans for implementing physical distancing and sanitation in laboratories and other workspaces (e.g. teaching spaces, office spaces) to enable safe work, and a description of all PPE needs and how they will be made available and used.

2. In addition, all faculty who were approved for Stage I Resumption of Research are asked to update their existing (previously approved) **CHBE Individual Faculty Workspace Safety Plan** to include a new list of personnel who will be allowed to access their laboratories, and a new work-shift schedule that includes those individuals and to be updated weekly. Previously approved plans already provide clear procedures for implementing physical distancing and sanitation in laboratories and other workspaces to enable safe work, so required updates to this document are minor.

It is understood that those granted permission to conduct on-campus research will limit that activity to laboratory tasks that cannot be done elsewhere. Time spent on campus must be kept to a minimum. It is expected that those who do not have permission to work onsite will continue to work remotely.

All personnel approved to conduct research on campus in CHBE-associated space during this limited R2C operational period must adhere to the following policies and procedures:

**Policy 1:** Violation of any component of the safety plan stipulated in this document will result in immediate loss of access to the CHBE building or CHBE-associated research spaces (CERC and GGF) until further notice.

**Policy 2:** Faculty are responsible for ensuring their **Covid-19 “Child” Workspace Safety Plan** reflects current government guidance and notices which can be found, along with information about
UBC’s response to the pandemic, at [https://covid19.ubc.ca/](https://covid19.ubc.ca/). They are also responsible for following current departmental safety policies procedures, all of which provided at [https://www.chbe.ubc.ca/resources/health-safety-environment/](https://www.chbe.ubc.ca/resources/health-safety-environment/).

Policy 3: Prior to returning to campus and (re)establishing any on-campus activities with students or other HQP, faculty must complete, sign and submit to the Department Head this **CHBE Building Safety Plan** (Appendix E). By signing and submitting this contract, CHBE faculty are confirming that they have made all personnel working with them aware of the mandatory policies and procedures stipulated in this Building Safety Plan. As noted above, faculty must also prepare their **Covid-19 "Child" Workspace Safety Plan** and receive approval for it by the CHBE Local Safety Team (LST), the Department Head, and where relevant, the Director of CERC. Once approved, the PI must share those plans with all personnel and ensure that all elements of the plans are enforced through the creation and use of a compliance checklist.

Policy 4: CHBE and its Faculty and Administration cannot require any individuals, including those under their direct supervision, to enter CHBE, CERC or GGF or to work in conditions in which they feel unsafe.

Policy 5: CHBE and its Faculty and Administration will ensure that all returning personnel be made fully aware of the risks through information made available through [https://covid19.ubc.ca/](https://covid19.ubc.ca/) on the CHBE department website, and by WorkSafeBC.

Policy 6: Each Faculty member and supervisor will prepare and post a daily logbook in each of their laboratory or teaching spaces. Personnel are required to record in that logbook the following information each time they enter/exit the space:

- Name
- Time they completed the **CHBE BC Health Self-Assessment** before coming to UBC that day (see Policy 7)
- Arrival and Departure Times

Policy 7: Any individual scheduled to come to CHBE or its associated research spaces (CERC and GGF) must:

- Self-monitor their health status using the **CHBE BC Health Self-Assessment**. If healthy, record that they self-monitored their health status via the logbook provided by the faculty supervisor (see policy 6)
- Use the online CHBE **Check-in** on arrival and **Check out** on departure.

The temperature and any abnormal symptoms of the individual must be assessed prior to arrival. COVID-19 affects different people in different ways. Most infected people will develop mild to moderate illness and recover without hospitalization. Covid-19 coronavirus symptoms according to WHO include:
Common symptoms:
- fever
- dry cough
- tiredness

Less common symptoms include:
- aches and pains
- sore throat
- diarrhea
- conjunctivitis
- headache
- loss of taste or smell
- a rash on skin, or discoloration of fingers or toes

Serious symptoms include:
- difficulty breathing or shortness of breath
- chest pain or pressure
- loss of speech or movement

Anyone experiencing any of these symptoms must use the CHBE BC Health Self-Assessment tool to determine if further testing or medical care is required. No one with symptoms should leave their home. If symptoms develop while at work, individuals are to leave immediately for home to self-isolate, monitor symptoms and/or seek medical attention in accordance with Public Health directives. Return to work only after the mandated self-quarantine period is complete and all symptoms resolve.

Again, no one with symptoms should leave their home or come onto campus.

Policy 8: Faculty and other supervisors will prioritize assignment of work shifts to those personnel for whom access to the building is most needed to further progress toward their research-thesis based degree or professional progress, or to advance the teaching and training enterprise of the department. In this R2C operation period, granting of access to undergraduate students is permitted under certain circumstances. This includes students with clear need to return to campus who are either employed by the Faculty Supervisor (e.g., Coop students, paid Work-Study students) or are enrolled in a degree-associated course where building access is required (e.g. CHBE senior thesis course). Students working in an unpaid voluntary basis in labs or to help prepare for teaching (including co-op and work-study students) will not be permitted without special and explicit approval from the Department Head and, if relevant, the Director of CERC.

Policy 9: Personal interactions while on campus must maintain a minimum physical distance of 2 m. All persons working in CHBE-associated spaces must always be mindful of this 2 m distancing requirement, and be respectful and patient when interacting with others. In circumstances where physical distancing cannot be maintained, supervisors must put in place other
protective measures, including those specified in the SRS UBC Employee COVID-19 Physical Distancing Guidance.

Policy 10: To minimize close physical contact, all hallways, elevators and stairwells will have marked preferred directions for moving through the building (CHBE, CERC). All personnel must adhere to them.

Policy 11: All individuals must minimize time at UBC, and work remotely, ideally from home, whenever possible.

This R2C operational period is absolutely not equivalent to a return to normal work. During this R2C period, time spent in the building must be kept to a minimum.

Maximum Building Occupancies During this Return to Campus Period

The estimated Maximum Normal Occupancies of CHBE, CERC and GGF are provided in the table below, along with the corresponding limits within this Return to Research period in which the level of building activity per day cannot exceed 66% of normal activity in that space, and has maximum limits set based on the need to adhere to Provincial Health policies, including physical distancing policies.

<table>
<thead>
<tr>
<th>Building</th>
<th>Maximum Normal Occupancy</th>
<th>Occupancy Limit in Return to Campus</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHBE including CERC</td>
<td>500</td>
<td>167</td>
</tr>
<tr>
<td>Gas-Gun Facility</td>
<td>15</td>
<td>5</td>
</tr>
</tbody>
</table>

Approvals of Covid-19 “Child” Workspace Safety Plans submitted by CHBE Faculty and Staff will be based on overall department adherence to these daily occupancy limits.

Building and Floor Wardens

For each CHBE-associated building and research space, space-specific wardens have been assigned with responsibility to monitor daily all activities under their watch to ensure the labs and the personnel are fully compliant with both the approved Covid-19 “Child” Workspace Safety Plan for the PI and the Building Safety Plan (Appendix E) for the unit. Spot checks for compliance will be performed regularly.

Subject to change when required, the Building and Floor Wardens are:

<table>
<thead>
<tr>
<th>Warden</th>
<th>Building</th>
<th>Spaces</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marlene Chow</td>
<td>CHBE and CERC</td>
<td>All</td>
</tr>
<tr>
<td>Samy Larkam</td>
<td>CHBE and CERC</td>
<td>All</td>
</tr>
<tr>
<td>Ken Wong</td>
<td>CHBE</td>
<td>Floors 3 to 6</td>
</tr>
<tr>
<td>Soung-Jae Bong</td>
<td>GGF</td>
<td>All</td>
</tr>
</tbody>
</table>
Procedures

Transit to and from UBC

- Any personnel required to be at UBC are strongly recommended to use transportation that minimizes exposure risk: travel by private vehicle, motorbike, bicycle, or walking is recommended.
- Translink options are discouraged, but if used must be in compliance with current City of Vancouver and BC recommendations
- Staggered starts/departures of lab personnel within an assigned laboratory work shift must be employed to minimize close physical contact during arrival/departure periods

Entering and Exiting CHBE and CERC

Use of masks is recommended when travelling through common spaces, including stairwells, hallways, etc.

CHBE Building

- All CHBE personnel must enter the CHBE Building through the WEST doors to the building atrium, and access floors above using the WEST stairwell or elevator. The use of the elevator is not recommended and is to be avoided unless shipments, equipment or other heavy loads are to be transported. (The WEST door has the handicapped button, so it is possible to avoid touching the door handle.)
- All CHBE personnel must exit the CHBE Building through the EAST stairwell door or EAST doors of the building atrium.
- APSC Development and BMEG personnel enter and exit the CHBE East Wing through the north door of East Wing and use the north stairwell of the East Wing.

CERC

- The CERC wings of CHBE must be accessed from within the CHBE building using the entry doors on the WEST side of the building. Personnel needing entry to the second-floor labs of CERC must use the WEST stairwell or elevator of CHBE and the WEST entry door to CERC. Personnel working within CERC must exit the building through the NORTH stairwell and door of CERC.
- The CERC high head lab must be accessed from its SOUTH entry door which lies adjacent to the WEST entrance of CHBE building.

GGF

- The Gas Gun Facility main entry is located on the SOUTH side of the building and secondary exits on the EAST and WEST side of the building. As the number of people in the facility at any time is limited to a maximum of two with staggered arrival/departure times, normal entry and exit will be through the main SOUTH entrance door.
• For security, the EAST and WEST doors will serve their intended purpose as emergency exits.

Office/Social Space Use

• Shared student and PDF offices are to be used one person at a time AND only if working from home is not possible.
• In-person group meetings, including lab group meetings, in any space must not be held during this R2C operational period.
• Faculty are not permitted to hold in-person meetings in their offices.
• Office desks should be wiped before and after use with disinfectant.
• Use of laptops and tablets while in any CHBE-associated space should be avoided if at all possible. If absolutely required, they must be wiped down with disinfectant upon entering and before exiting the premises.
• All personnel must actively work to minimize personal (close contact) interactions; maintain physical distancing when personal interactions or occupancy of the same space (e.g. hallways) are required.

Work Space(s) Use

The following steps must be completed by Faculty and Staff members prior to resumption of any on-campus activities under their supervision:

• The required Annual Safety Audit of all laboratory space(s) must be completed and recorded by the CHBE/CERC (Samy Larkam) Safety & Technical Coordinator prior to resumption of any access to the buildings or resumption of work within those buildings. All safety issues recorded in that inspection must be addressed prior to resumption of work. However, completion of the audit does not grant permission to resume work, as approval of the PI’s Covid-19 “Child” Workspace Safety Plan must also be granted by the Department.

• Specific COVID-related risks must be identified (i.e. highly touched surfaces, shared equipment/infrastructure, areas where contact with others could occur) and a plan to mitigate them must be provided by the Faculty member, approved by the Head and Research Centre Director (if required), and implemented. For Faculty who are currently operating under an approved Stage I Resumption of Research application, this will require them to update and submit their existing CHBE Individual Faculty Workspace Safety Plan. Faculty and Staff not currently approved to conduct limited on-campus activities will need to provide this information in the form of an appendix to their Covid-19 “Child” Workspace Safety Plan. That appended plan must include
  o Procedures for ensuring safe physical distancing at all times
  o Procedures for disinfection of work spaces and commonly touched surfaces (e.g. door handles, equipment, etc.).
  o Personal Protective Equipment (PPE) needs and use. Faculty may order PPE requirements through CHBE Stores.
  o Buddy systems as well as clear chains of command and contact information must be established and enforced to address and report any concerns or incidents
Personnel Tracking procedures - Each Faculty supervisor will prepare and post a daily logbook in each of their work spaces. Personnel are required to record the following information each time they are in the space (Name, completion of the BC Health self-assessment protocol before coming to UBC that day, Arrival Time, Departure Time).

- Faculty and Staff must prepare and submit for approval by the CHBE Head, the CHBE LST and where appropriate the CERC Director, a weekly work-shift schedule that defines the approved personnel for each work shift and identifies who will be the designated captain (main on-site supervisory duties) for that shift.

  - Daily work-shift schedules must limit the number of personnel so as to not exceed the maxima occupancy levels for their work spaces defined in Appendix C.

- Once their Covid-19 “Child” Workspace Safety Plan is approved, Faculty and Staff must provide and review the detailed plan to all personnel under their supervision, and also post the plan at appropriate positions in their approved work space(s).

- Faculty and Staff are responsible for making sure that their work spaces and personnel are fully compliant with this CHBE Building Safety Plan and their approved Covid-19 “Child” Workspace Safety Plan at all times. As part of this, Faculty and Staff should create and use a workspace-specific compliance checklist for workspace safety.

Safety and Operational Guidelines that should be followed by all personnel include:

1. Always maintain a minimum distance of two metres (2 m) to the next person.
   
   Rules of thumb: keep at least one workspace (bench) between you and others.

2. To facilitate physical distancing and effective contact tracing, the workday within the work-spaces of the approved Faculty or Staff should be organized into daily shifts as described above. Personnel assignments to each shift will be set by the faculty supervisor, and reassignment of personnel within the daily work shifts in a given week will not be permitted once those assignments have been made without approval from the CHBE LST or Department Head. Though restrictive, this is to facilitate contact tracing should a positive diagnosis occur within a shift. Within each research group, each shift must establish a chain of command, including a lead member (“Captain”) assigned to contact both the Faculty/Staff supervisor and the department in case of a concern or emergency. The Captain should also oversee routine duties such as receipt of deliveries and interfacing with personnel from CHBE Stores. Any individual in any CHBE space must actively clean and disinfect surfaces they have touched or accessed, particularly high-touch surfaces (e.g. door handles).

3. Every person approved to work on campus in the greater CHBE research space (including CHBE, CERC, GGF) must always use the sign-in and sign-out systems described above to ensure that all occupants are known at any given time, and that the total number of occupants meets our overall safe work plan. Records of the sign-in and out will be maintained and monitored by the
Faculty/Staff supervisor, the Head of the CHBE Department, and where appropriate, the Director of CERC.

4. **The maximum number of persons allowed in each room/space at any time will strictly adhere to the occupancy limits provided in Appendix C.** will be posted in the room and must not be exceeded.

5. Avoid personal contacts by keeping your required distance (2 m or 6.6 feet) from others and reducing time spent in common areas and movement throughout the buildings. Where possible, complete multiple tasks requiring movement through common areas in one trip.

6. When in use, doors of shared offices should be propped open to minimize frequent touching. Lab doors should be closed to ensure ventilation systems operate correctly. As noted above, all high touch areas within your work space should be cleaned regularly.

7. PPE (Non-medical masks) - Respiratory mask usage is not mandatory but is encouraged in working areas: labs, equipment rooms, offices. Respiratory mask use is highly recommended when travelling through common areas of each building. Personnel may bring and use their own clean washable cloth mask. Dispose of PPE and all waste responsibly.

   All waste is to be disposed of in the waste bins at east and west end of the hallways.

8. PPE (Lab Coats and Safety Glasses) - Lab coats and safety glasses must always be worn at all times in lab work areas, including teaching laboratories. Lab coats are not to be worn in common areas.

   - Store your personal lab coat away from that of others.
   - Lab coat laundry will be made available to all CHBE-associated researchers, regardless of their location within the greater CHBE work space, and should be used regularly. Laundry service use will require you to bag lab coats and label the lab room of use before delivery to CHBE Stores for cleaner service delivery.

9. PPE (Gloves) - Gloves are to be used for laboratory/teaching laboratory work and are not to be worn in common/office areas unless handling chemicals and/or equipment.

10. Hand Washing - All personnel in all CHBE-associated spaces are required to wash their hands regularly, and to wash hands and sanitize all commonly touched surfaces when entering or leaving any space.

   - Hand washing with soap (preferable) or sanitizer use must take place when entering or leaving the building. Regular hand washing in work spaces is expected.
   - Additionally, personnel must wash hands and sanitize appropriately any time they move between areas: lab, office, and common areas. Dispose of paper towels in appropriate waste containers.

11. Surface cleaning - Disinfectant must be used to wipe down any frequently touched surfaces pre- and post-use, including:
COVID-19 Intermediate Plan Template

- All common surfaces including handles and switches.
- All multiuser equipment (pipettes, automated pipettes, balances, gloveboxes...)
- Shared chemical/reagent bottles
- Disinfectant spray bottles (70% ethanol with surfactant and bleach) and paper towels will be provided by the CHBE department in common areas on each floor.
- Dispose of all used cleaning materials in appropriate waste containers. Waste containers will NOT be emptied. At the end of a day, CHBE work-space users are to empty waste containers into the bins at the end of the hallways. Hazardous waste and glass are to be disposed of following department guidelines.

12. Work routines must be coordinated in both time and space (shift work) and must include:

- Establishing daily work shifts in accordance with the guidelines provided above
- Coordinating shifts within shared labs (e.g. teaching labs and labs shared with two or more other research groups) to remain below the lab’s maximum occupancy
- Coordinating work within common lab areas (equipment rooms; shared research spaces) to maintain physical distance.
- Coordinating cleaning/disinfection routines and responsibilities.

13. Multi-user Facilities

CERC High-Head Lab (HHL)

- The high head lab (room 145) is an open lab of ~500 m², currently hosting 10 research units. The equipment are well dispersed and clearly defined, which enables the enforcement of 2 m social distance among all researchers working on different units.
- Researchers in HHL are encouraged to wear non-medical masks and stay at their units except entering or exiting the room.
- Researchers must stay at the unit all the time except entering and exiting the room, maintain a greater than 2 m distance from other researchers in the lab and keep at least 2 m away from the common walk-way as marked on the floor.
- Access to the HHL must occur via the SOUTH door adjacent to the WEST entrance of CHBE building. All personnel are asked to wash or sanitize their hands prior to entering the CERC HHL.

14. Multi-user instruments

- Labs/facilities must identify multi-user instruments and develop an approved protocol for their safe shared use as part of their safe-work plan
- Users of multi-use instruments must clean their hands and the instrument before and after each use. Cleaning materials are to be disposed of appropriately.
- Users must wear all required PPE (mask, safety glasses, lab coat) when using multi-use instruments

15. General Worker Safety
• All work-shift schedules should ensure and promote a buddy system (pairs of workers) to improve safety and avoid personnel working alone

Meals and Breaks

• Meals, snacks and breaks should be enjoyed outdoors, and not in CHBE-associated building spaces, while observing physical distancing guidelines. If the weather does not permit, food is to be consumed either in your office, provided that nobody else is in that office at the time, or (preferably) on the ground floor of the main CHBE Building in the open atrium area while exercising physical distancing measures.
• Food and food preparation should be minimized. Users are to wipe tables and all other surfaces with disinfectant before use. The staff lunchroom (2nd floor) and 6th floor lunchroom/lounge will not be available for use, including common appliances therein (e.g. microwave, coffee maker).
• Food waste is to be disposed of in waste containers at east and west ends of the hallways available on each floor.
• No drink containers or dishes are to be left in common areas.

Common Space Use

There are several common areas within CHBE-associated space that normally can accommodate multiple people and where individuals tend to congregate. For the CHBE main building, these include the two main building entrances (East and West side of CHBE), open areas and the administrative offices on the second floor, the stairwell exits onto the third to sixth floors, and all hallways. All individuals must adhere to a minimum 2 m physical distancing in these areas. These areas are passageways, and should be kept clear. All personnel should pass through the areas without stopping and in the direction the posted signage and arrows on the floor surfaces indicate. Notices are posted to this effect.

Additional general guidelines that must be followed during Use of Common Area are:

• Maintain physical distancing
• Wearing of respiratory masks is highly recommended in common space areas
• Each building entry door, hallway, stairwell and elevator has been marked with signage to establish preferred directions for entering and moving through the buildings. All personnel must adhere to them.
• When moving through the building, masks should be worn if possible, and reusable personal masks that can be washed daily are encouraged
• Hands should be washed before entering common spaces and washed again upon returning to working spaces
• The first-floor atrium in the main CHBE Building will be open, but all meeting rooms will be closed for the duration of the Phase I Resumption of Research.

The following guidelines for safe use of specific common areas must also be followed:

Hallways
All hallways are approximately 2 m wide. Given the reduced occupancy of the building, we do not anticipate a lot of traffic. Nevertheless, each hallway has been marked with signage to establish required directions for moving through the buildings. All personnel must adhere to them. In cases where two people are headed in opposing direction, in order to pass safely, one person must step aside to the right into the nearest hallway recess in front of a lab door and wait for oncoming people to pass. Please adhere to the following passing etiquette – persons moving in accordance with building signage have the right of way, and persons going in the wrong direction must step aside. Priority directions will be marked with signage and taped arrows on the floor. Hallways must be kept clear of clutter at all times. No extraneous items (e.g. crating materials, boxes, furniture) shall be stored in the hallways.

Elevators

The CHBE/CERC building has two elevators. Use of the elevators during this Phase I resumption of research period is restricted to those needing to transport materials and those who need special assistance going up and down between floors. Those who can readily manage the stairs should avoid using the elevator as it is a poorly ventilated, confined space. A maximum of two persons are permitted to use an elevator at the same time. Those traveling up must use the WEST elevator, while those moving down must use the EAST Elevator, so as to maintain proper traffic flow on each floor. Signage outside the elevator indicates maximum elevator capacity is two people during this Stage I Resumption of Research period.

Stairwells

The stairs in the CHBE/CERC building do not allow a full 2 m distancing if occupants are passing each other. Personnel using the stairs are not to overtake others in the stairwell.

The stairs located on the WEST end of the CHBE building are therefore to be exclusively used by personnel travelling up in the building, and the EAST stairs exclusively used by personnel travelling down in the building. Signs and floor markings are provided to notify occupants of this expectation. Please follow the directional signs and instructions.

Potable Water Sources

CHBE Administration will coordinate with UBC Building Operations to monitor the quality of water within the CHBE/CERC building. Drinking fountains are not available for use in Phase 1.

Lunch Rooms

The lunch rooms in CHBE/CERC, including the 6th floor lounge, will be closed.

All personnel are asked to eat outside whenever possible. If weather does not permit that, personnel must eat in the first-floor atrium while exercising personal distancing in their office, provided that nobody else is in that office at the time. Hands must be washed on entry and again on exiting the atrium.
The first-floor atrium will be open to all CHBE-associated personnel for eating lunch and for enjoying breaks. The same cleaning procedures as defined for the lunch rooms should be applied. Occupancy will be limited to 12 by reducing the number of chairs and tables. Occupancy limits will be posted. Users must clean and disinfect all touched surfaces with the provided disinfectant provided before departing the atrium.

Washrooms

Washrooms are a high-risk space. Extra care in hand-washing, not touching your face with unwashed hands and respecting physical distancing measures is crucial. In multi-user washrooms (normally appropriate for 2 users), doors to washrooms will be propped open to minimize the number of high touch surfaces. Only one occupant may use a washroom at a time. Users are expected to announce themselves before entering and only enter if the washroom there is no one present. Single user washrooms lock and have an occupied sign. Further instructions are posted at the entrances of each washroom.

Other Common CHBE Spaces

Main Offices
The CHBE student administration offices will remain closed and locked, with staff working remotely. The administration floor (2nd floor of CHBE) will be accessible only with a UBC card or fob and the offices accessible by key. Limited administration staff will be available during the work week, typically Mon – Fri:

Charles Haynes, Head Rm 261 10:00 am to 4:00 pm
Marlene Chow Rm 253 8:30 am to 4:30 pm

PIs may enter the administration offices to a maximum occupancy of:

Main Office, Rm 218 maximum 2 people
Mail and Photocopy Room, Rm 218B maximum 1 person

Mail will be delivered to the second floor of CHBE by the UBC central mail centre in a contactless manner. Hand sanitization will be performed by Marlene Chow before after collection, and after mail distribution to PI bins. Those who will continue working off-campus will be permitted to come to reception to collect urgent mail items from the mail and photocopy room, subject to approval by Marlene Chow (marlene.chow@ubc.ca) or the Department Head (charles.haynes@ubc.ca). Requests and approvals will be made by email. Brief visits to collect items from offices or labs will also be allowed on the same basis, with justification and a specific time window. These visits must also be scheduled and approved to make sure maximum occupancy levels are respected for specific workspaces. All coming to the CHBE Building must complete the BC Health Self-Assessment and the online CHBE Check-in on arrival and Check out on departure.

CHBE Stores
CHBE Stores daily (M - F) operational hours will be:

8:30 am – 12:00 pm
1:00 pm – 3:45 pm

Only one person in addition to the Storekeeper is permitted in CHBE Stores at any time. Wait in the hallway to the north of Stores if the storekeeper is serving another individual. All personnel are asked to contact the storekeeper by email or phone whenever possible so as to minimize Stores visits.

- All required research items by CHBE-associated laboratories must be ordered through Stores. Items not ordered through Stores will not be accepted on delivery by Stores.
- Book appointments to pick up orders through the [CHBE MRBS](#) system (CWL login to MRBS and select CHBE Stores Pick-Up).
- Items to be picked up will left outside of the Stores door.
- Stores equipment that is shared such as carts are to be wiped down by users on pick-up and on return. The Gas cylinder carts are stored adjacent to an outside door so no entry into Stores is required.
- Minimize visits to Stores to no more than once a day to pick up multiple items if required.
- Stores equipment that is shared such as carts are to be wiped down by users on pick-up and on return.

Gas cylinders, liquid nitrogen and large packages will be received and delivered at the loading dock. Gas and liquid nitrogen delivery drivers have access to the dock during normal working hours and so no contact delivery is done. Other use of the loading dock will be done in coordination with Marlene Chow ([marlene.chow@ubc.ca](mailto:marlene.chow@ubc.ca)). Where physical distancing cannot be maintained during delivery, requests for approval must be made in advance by email to Marlene Chow ([marlene.chow@ubc.ca](mailto:marlene.chow@ubc.ca)). The requests must be justified based on urgency, the measures taken to minimize risks of transmission, along with overall safe moving procedures. Timing must also be specified.

### CHBE Workshop

The CHBE workshop will be operational with workshop hours: 6:00 am to 1:00 pm, Monday to Friday.

- Staff are available via email and zoom to discuss projects and work.
- All projects are to be submitted through the CHBE Work Order system.
- No in-person consultation with Workshop personnel.
- Repairs are to be coordinated in advance. The lab must be vacant prior to workshop personnel arrival. No other persons are permitted in the lab when workshop personnel are working. Workshop personnel will disinfect surfaces on arrival and departure.
- Items dropped off to the workshop must be clearly labelled (name and work order number), disinfected and left in the designated area defined by the Workshop prior to work. Workshop personnel will disinfect items before work. Completed items will be disinfected and left in the designated area for pick-up.
- No unauthorized personnel are permitted in the workshop areas.

### Respect for UBC Custodial Staff

- All approved work in the CHBE buildings should occur between 7:00 am and 7:00 pm and all work spaces should be vacated outside those times to allow custodial staff to access and clean building spaces while observing personal distancing rules.
• All CHBE personnel should be respectful of custodial staff working in the building.
• UBC Custodial Services cleans common areas and washrooms twice a day on weekdays, provides soap and paper towels in the washrooms, and refills hand sanitizer stations within the CHBE building and the Clean Energy Research Centre.

Responsibilities

Faculty

• Must review, sign and submit to the Department Head this Building Safety Plan (Appendix E)
• Must prepare and submit to the Department Head and the CHBE LST (safety@chbe.ubc.ca) a Covid-19 “Child” Workspace Safety Plan specific to your activities and all spaces assigned to your personnel (see instructions above). For faculty already approved for Stage I Resumption of Research activities, this will include an updated CHBE Individual Faculty Workspace Safety Plan. All other Faculty and Staff will need to provide appendix to their Covid-19 “Child” Workspace Safety Plan as detailed above.
• Must ensure all personnel under their supervision have 1) read and understood both the signed Building Safety Plan and the specific policies and procedures defined in the PI’s Covid-19 “Child” Workspace Safety Plan and 2) will adhere to all Federal/Provincial regulations and UBC policies.
• Must provide contact information (name, email, phone number) for all personnel expected to enter their workspace(s) to the CHBE safety officer.
• Must post contact info, maximum personnel limits, worker shift schedules and workplace protocols on all associated work-space entrances, and must make those schedules known to all personnel prior to the start of the work week.
• Must report all safety incidents to CAIRS within 48 hours of an incident and must collaborate with CHBE administrative staff and safety personnel to complete the full investigative report within 30 days.

All Other Approved Personnel

• Must read and agree to follow all the Federal/Provincial regulations, as well as all Lab-specific, departmental and UBC policies pertaining to performing research during this Return to Campus operational period.
• Must report concerns to faculty supervisors or the CHBE administrative staff as appropriate in terms of UBC and BC privacy regulations.
• Must report any safety incidents to the CHBE Safety Officer within 24 hours and must collaborate to complete the investigation within 30 days.

Communications Plan

All building related plans will be communicated with all occupants of the building via the department-wide email lists. A paper copy of this plan and other relevant safety related materials will also be available on the table in the entrance of the CHBE Administrative Offices, Rm 218. This Building Safety Plan is also posted on the building website (www.chbe.ubc.ca) along with links to important
documentation listed above. The Department Head, Charles Haynes (charles.haynes@ubc.ca; 604-788-2580), the Department Associate Head, Savvas Hatzikiriakos (savvas.hatzi@ubc.ca; 604-329-5797), the CHBE LST, and the Building and Operations Director, Marlene Chow (marlene.chow@ubc.ca; 778-879-5105), have participated in the development of this plan. All are available to respond to questions about the plan by email or cell-phone, and will quickly respond if an urgent need arises.

Compliance Monitoring

The overall monitoring of compliance with the Building Safety Plan will be led by Marlene Chow (Emergency Coordinator and Co-Chair of the CHBE LST (Local Safety Team) and Samy Larkam (CHBE Safety Manager). They or their appointed stand-in will be present in the buildings each work day. In addition, Ken Wong will serve as a warden to the 3rd to 6th floors of the CHBE building.

Faculty and Staff are responsible for daily monitoring of all activities in their work spaces to ensure the space and the personnel under their supervision are fully compliant with the approved CHBE “Intermediate” Workspace Safety Plan, their Covid-19 “Child” Workspace Safety Plan, and the Building Safety Plan for the unit. Spot checks for compliance will also be performed regularly.

Critical Contacts and Their Contact Information

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>email</th>
<th>Cell Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charles Haynes</td>
<td>Head, CHBE</td>
<td><a href="mailto:charles.haynes@ubc.ca">charles.haynes@ubc.ca</a></td>
<td>604-788-2580</td>
</tr>
<tr>
<td>Xiaotao (Tony) Bi</td>
<td>Director, CERC</td>
<td><a href="mailto:tony.bi@ubc.ca">tony.bi@ubc.ca</a></td>
<td>778-686-3668</td>
</tr>
<tr>
<td>Savvas Hatzikiriakos</td>
<td>Assoc. Head, CHBE</td>
<td><a href="mailto:savvas.hatzi@ubc.ca">savvas.hatzi@ubc.ca</a></td>
<td>604-329-5797</td>
</tr>
<tr>
<td>Marlene Chow</td>
<td>Director of CHBE Operations</td>
<td><a href="mailto:marlene.chow@ubc.ca">marlene.chow@ubc.ca</a></td>
<td>778-879-5105</td>
</tr>
<tr>
<td>Samy Larkam</td>
<td>Safety Officer, CHBE/CERC</td>
<td><a href="mailto:safety@chbe.ubc.ca">safety@chbe.ubc.ca</a></td>
<td>604-822-3857</td>
</tr>
<tr>
<td>Soung Jae Bong</td>
<td>Building Warden, GGF</td>
<td><a href="mailto:soungjae.bong@ubc.ca">soungjae.bong@ubc.ca</a></td>
<td>778-512-8437</td>
</tr>
</tbody>
</table>

Signature Line for Faculty Acknowledgment

I ______________________________________ have read and understand the standard and additional safety precautions being taken during this time in order to reduce our risk from COVID-19, and sign below to verify that I and my research personnel will conduct all on-campus work in compliance with this policy.

FACULTY MEMBER SIGNATURE ________________________________

DATE ______________________________________
Appendix F – List of APSC Safety Team Representatives (STRs)

<table>
<thead>
<tr>
<th>Department</th>
<th>Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIVIL</td>
<td>Scott Jackson</td>
</tr>
<tr>
<td>CHBE</td>
<td>Marlene Chow</td>
</tr>
<tr>
<td>MECH</td>
<td>Jennifer Pelletier</td>
</tr>
<tr>
<td></td>
<td>Monica Clarkson</td>
</tr>
<tr>
<td>ECE</td>
<td>Darla La Pierre</td>
</tr>
<tr>
<td></td>
<td>Matthew Kutarna</td>
</tr>
<tr>
<td>MINE</td>
<td>Mac MacLachlan</td>
</tr>
<tr>
<td>MTRL</td>
<td>Michelle Tierney</td>
</tr>
<tr>
<td>ENPH</td>
<td>Dylan Gunn</td>
</tr>
<tr>
<td>GEO</td>
<td>Ian Ayeras</td>
</tr>
<tr>
<td>IGEN</td>
<td>Jon Nakane</td>
</tr>
<tr>
<td>ICICS</td>
<td>Fatima Damji</td>
</tr>
<tr>
<td>ESC</td>
<td>Richard Colwell</td>
</tr>
<tr>
<td>EDC</td>
<td>Richard Colwell</td>
</tr>
<tr>
<td>SALA</td>
<td>Robert Geyer</td>
</tr>
<tr>
<td>SCARP</td>
<td>Dolores Martin</td>
</tr>
<tr>
<td>NURS</td>
<td>Bob Wilson</td>
</tr>
</tbody>
</table>

Appendix G – Shared Facilities

When navigating approvals within shared facilities, the approval should follow the administrative path of where the work will be completed (i.e. research work occurring within a Department/School’s space footprint vs. research work occurring within a Research Centre/Institute’s space footprint.) That said, Department Heads/School Directors and Research Centre/Institute Directors, the relevant LSTs, and building administrators/facility managers must work collaboratively to ensure the accuracy of building occupancy.

Department Heads/School Directors:

- Will approve the Intermediate plan for their unit.
  - This document should accurately reflect all relevant updated Building Safety Plan(s); Building Safety Plans are to be worked on collaboratively with any/all shared facility owners (LSTs co-chairs, facility managers, Heads/Directors, etc.).
- Will approve all Child plans submitted for work which will occur in the building(s) under the administrative control of their Department/School.
  - Child plans must support the occupancy capacities and protocol outlined in the Building Safety Plans.
Research Centre/Institute Directors:

- Will approve the Intermediate plan for their unit.
  - This document should accurately reflect all relevant updated Building Safety Plan(s);
    Building Safety Plans are to be worked on collaboratively with any/all shared facility
    owners (LSTs co-chairs, facility managers, Heads/Directors, etc.).
- Will approve all Child plans submitted for work which will occur in the building(s) under the
  administrative control of the Centre/Institute (i.e. ICICS, AMPLE, etc.).
  - Child plans must support the occupancy capacities and protocol outlined in the Building
    Safety Plans.

Table 3 – Contact List for APSC Occupied Buildings

<table>
<thead>
<tr>
<th>Building Name</th>
<th>Occupants</th>
<th>Head/Director</th>
<th>Building Admin and/or Facility Manager</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centre for Interactive Research on Sustainability [CIRS]</td>
<td>School of Architecture and Landscape Architecture</td>
<td>Ron Kellett</td>
<td>Robert Geyer</td>
</tr>
<tr>
<td></td>
<td>Sustainable Building Science</td>
<td>Linda Nowlan</td>
<td>Masoumeh Eghtesad</td>
</tr>
<tr>
<td>Chemical &amp; Biological Engineering Building</td>
<td>Chemical and Biological Engineering</td>
<td>Charles Haynes</td>
<td>Marlene Chow / Samy Larkam</td>
</tr>
<tr>
<td></td>
<td>Clean Energy Research Centre</td>
<td>Xiaotao Bi</td>
<td>Sarah Chen</td>
</tr>
<tr>
<td></td>
<td>APSC Dean's Office</td>
<td>James Olson</td>
<td>Richard Chen</td>
</tr>
<tr>
<td>Civil and Mechanical Engineering Building</td>
<td>Civil Engineering</td>
<td>Bernard Laval</td>
<td>Scott Jackson</td>
</tr>
<tr>
<td></td>
<td>APSC Dean's Office</td>
<td>James Olson</td>
<td>Richard Colwell</td>
</tr>
<tr>
<td></td>
<td>Mechanical Engineering</td>
<td>Steve Feng</td>
<td>Jennifer Pelletier / Monica Clarkson</td>
</tr>
<tr>
<td>Civil and Mechanical Engineering Laboratories</td>
<td>Civil Engineering</td>
<td>Bernard Laval</td>
<td>Scott Jackson</td>
</tr>
<tr>
<td></td>
<td>APSC Dean's Office</td>
<td>James Olson</td>
<td>Richard Colwell</td>
</tr>
<tr>
<td></td>
<td>Mechanical Engineering</td>
<td>Steve Feng</td>
<td>Jennifer Pelletier / Monica Clarkson</td>
</tr>
<tr>
<td>Civil and Mechanical Engineering Structures Lab</td>
<td>Civil Engineering</td>
<td>Bernard Laval</td>
<td>Scott Jackson</td>
</tr>
<tr>
<td>Coal and Mineral Processing Laboratory</td>
<td>Mining Engineering</td>
<td>Scott Dunbar</td>
<td>Joanna Ho</td>
</tr>
<tr>
<td>Coal and Mineral Processing Laboratory Addition</td>
<td>Mining Engineering</td>
<td>Scott Dunbar</td>
<td>Joanna Ho</td>
</tr>
<tr>
<td>Building</td>
<td>Department</td>
<td>First Name</td>
<td>Last Name</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>-------------------------------------------------</td>
<td>------------------------</td>
<td>------------------------------</td>
</tr>
<tr>
<td>Earthquake Engineering Research Facility</td>
<td>Civil Engineering</td>
<td>Bernard Laval</td>
<td>Scott Jackson</td>
</tr>
<tr>
<td>Engineering High Head Room Laboratory</td>
<td>Mechanical Engineering</td>
<td>Steve Feng</td>
<td>Jennifer Pelletier / Monica Clarkson</td>
</tr>
<tr>
<td>Engineering Student Centre</td>
<td>Engineering Undergrad Society</td>
<td>James Olson</td>
<td>Richard Colwell</td>
</tr>
<tr>
<td>Forest Sciences Centre</td>
<td>Institute for Computing, Information and Cognitive Systems</td>
<td>Rob Rohling</td>
<td>Fatima Damji / Gabel Yeung</td>
</tr>
<tr>
<td>Frank Forward Building</td>
<td>Institute for Computing, Information and Cognitive Systems</td>
<td>Rob Rohling</td>
<td>Fatima Damji / Gabel Yeung</td>
</tr>
<tr>
<td></td>
<td>Materials Engineering</td>
<td>Daan Maijer</td>
<td>Michelle Tierney</td>
</tr>
<tr>
<td></td>
<td>Mining Engineering</td>
<td>Scott Dunbar</td>
<td>Joanna Ho</td>
</tr>
<tr>
<td>Frederic Lasserre Building</td>
<td>School of Architecture and Landscape Architecture</td>
<td>Ron Kellett</td>
<td>Robert Geyer</td>
</tr>
<tr>
<td></td>
<td>School of Community and Regional Planning</td>
<td>Heather Campbell</td>
<td>Dolores Martin</td>
</tr>
<tr>
<td>Gas Gun Facility</td>
<td>Chemical and Biological Engineering</td>
<td>Charles Haynes</td>
<td>Marlene Chow / Samy Larkam</td>
</tr>
<tr>
<td>H. R. Macmillan Building</td>
<td>Civil Engineering</td>
<td>Bernard Laval</td>
<td>Scott Jackson</td>
</tr>
<tr>
<td></td>
<td>APSC Dean's Office</td>
<td>James Olson</td>
<td>Richard Colwell</td>
</tr>
<tr>
<td></td>
<td>Integrated Engineering Program</td>
<td>Jon Nakane</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Faculty of Land and Food</td>
<td>Ricky Yadda</td>
<td>Andy Jeffries</td>
</tr>
<tr>
<td></td>
<td>School of Architecture and Landscape Architecture</td>
<td>Ron Kellett</td>
<td>Robert Geyer</td>
</tr>
<tr>
<td></td>
<td>Institute for Computing, Information and Cognitive Systems</td>
<td>Rob Rohling</td>
<td>Fatima Damji / Gabel Yeung</td>
</tr>
<tr>
<td></td>
<td>Mechanical Engineering</td>
<td>Steve Feng</td>
<td>Jennifer Pelletier / Monica Clarkson</td>
</tr>
<tr>
<td>Koerner Pavilion</td>
<td>School of Nursing</td>
<td>Elizabeth Saewyc</td>
<td>Bob Wilson</td>
</tr>
<tr>
<td>Landscape Architecture Annex</td>
<td>School of Architecture and Landscape Architecture</td>
<td>Ron Kellett</td>
<td>Robert Geyer</td>
</tr>
<tr>
<td>Lower Mall Research Station</td>
<td>APSC Dean's Office</td>
<td>James Olson</td>
<td>Richard Colwell</td>
</tr>
<tr>
<td>Macleod Building</td>
<td>Under construction</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
</tbody>
</table>
### Appendix H – Return to Campus Activity Commitment Form

Building requirements for conduct related specifically to COVID-19 safety have been developed for the [insert name of building] building in general and workspace in particular. The building guidelines have been co-developed by the LST co-chairs from [insert name of Departments/Schools/Units involved sharing the one building]. All students, staff and faculty who are permitted to resume activities in the [insert name of building] building are required to complete the following requirements. Send completed form to your supervisor or his/her designate → [insert name of Departmental/School designate dedicated to collecting these forms & SRS course certificates of completion.]
## COVID-19 Intermediate Plan Template

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Check when complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review the building safety plan</td>
<td></td>
</tr>
<tr>
<td>Review the workspace safety plan</td>
<td></td>
</tr>
<tr>
<td>Complete the SRS online COVID-19 safety course and sent the certificate to</td>
<td></td>
</tr>
<tr>
<td>[insert name]</td>
<td></td>
</tr>
<tr>
<td>[List any other specific training you require]</td>
<td></td>
</tr>
</tbody>
</table>

Your name: _______________________ Date: __________

Faculty/Dept. ____________ Your main room no. _______

Your role (faculty, staff, grad student, etc.): ___________________

Supervisor: ________________ Signature: ___________

By your signature you agree that you intend to meet the requirements/principles for:

- Doing the daily building check-in and check-out (QR code access)
- Practices for protecting against getting COVID-19 (stay home if ill; avoid touching your face; wash hands frequently; physical distancing > 2 m)
- No building access unless authorized by the schedule set up by the supervisor
- Knowing the guidelines for entry/exit to/from the building and getting around it
- Accessing washrooms and photocopy room
- Eating guidelines
- Cleaning and disinfecting commonly touched surfaces and shared equipment/tools
- Knowing who to contact for safety and interpersonal concerns/problems
- Abide by your unit working alone policy
- Building evacuation procedures in case of emergency
- What to do if someone shows signs of respiratory illness
- Consequences of not following requirements and rules