



QUICK REFERENCE GUIDE TO BUILDING ENGINEERING SYSTEMS

Re-Activating Your Building Post COVID-19

Re-Activate Your Building with Stantec

Building re-activation after a period of hibernation requires a thoughtful and considered approach. In the wake of COVID-19, building owners and operators must adapt their buildings to respond. Stantec is here to help you plan your move back into your building and beyond.

We have assembled this quick reference guide to help you start to think about your building systems as you plan for re-occupation.

The following suggestions are general in nature, and intended to be a starting point for discussions about building re-activation. Each organization's and building's needs and limitations are different – contact Stantec for advice specific to your building before implementing changes to your systems.



Beginning Re-Activation

Step 1: Plan – Make a re-activation plan by building, system, and item.

Step 2: Inspect – Inspect current state of systems in detail; check for system leaks and water ingress.

Step 3: Determine – In the event of partial occupancy, not all building systems may be required; identify which systems require re-activation.

Step 4: Prioritize – Prioritize which systems need to be brought back online first.

Step 5: Review – Review physical changes to the environment, building, or occupancy arrangements that may have occurred.

Step 6: Identify – Identify potential points of failure and what immediate re-activation maintenance may be required, including decommissioning temporary systems, refilling of systems, repairs, etc.

Step 7: Consult – Consult with Authorities Having Jurisdiction to determine specific measures required before re-activating. Engage the architect and building engineering team.

Step 8: Protect – Consider the safety impacts on facilities maintenance staff and occupants at each stage of your plan.

Remember – There is a cost associated with re-activation and some COVID-19 measures may increase running costs and energy consumption.

Plumbing Systems

Step 1: Review – Carry out a Legionella risk assessment. Investigate stagnant water systems for risk of contamination.

Step 2: Flush – Flush hot and cold water through all points of use to replace all water inside building piping with fresh water. Flush hot water until it reaches its maximum temperature.

Step 3: Disinfect – Disinfect hot and cold water systems as close to occupancy as possible; check residual disinfectant levels and test water samples from outlets and tanks.

Step 4: Inspect – Inspect and refill plumbing traps and floor drains that may have dried out; check drains are free flowing.

Step 5: Consider – Consider retrofitting to hands-free plumbing fixtures and adding lids to water closets.

Remember – Don't forget vending machines with drinks, water softeners, etc.



HVAC Systems

Step 1: Filter – Replace used filters with maximum level the system will support, ideally MERV 13 or higher.

Step 2: Flush – Flush out the building prior to occupancy with fresh outdoor air. Make sure conditioned air reaches all spaces.

Step 3: Ventilate – Increase outdoor ventilation rates during occupancy periods and extend operating hours to enhance air turnover. Consider disabling demand control ventilation and increasing outdoor air to 100% if the building systems will accommodate this. Consider disabling heat recovery systems if there is a risk of bypass.

Step 4: Condition – Maintain the building relative humidity between 40% and 60%, if the building envelope, finishes, and systems can accommodate it.

Step 5: Control – Revert BAS settings to occupied mode. Consider BAS schedule of occupied mode and if original schedules and durations will be maintained. Consider extended occupied operation for extended flushing of the occupied spaces.

Step 6: Investigate – Investigate additional air treatment e.g. UVGI disinfection, ionization filtration.

Step 7: Check – Ensure cooling towers are cleaned and well-maintained, and follow appropriate start-up processes e.g. chemical treatment. Check pneumatic controls systems are operational and refrigeration systems charged. Check for Legionella.

Remember–It’s likely that you are re-activating your systems in a new season. Remember to make any necessary seasonal adjustments.



Electrical Systems

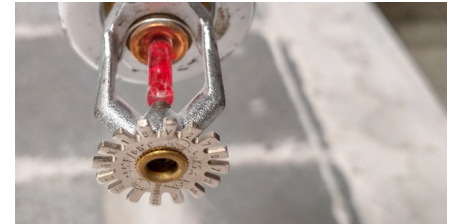
Step 1: Inspect – Inspect equipment before re-energizing.

Step 2: Stage – Operate staged reverse lockout system as systems are re-enabled; consider a staged start-up of equipment.

Step 3: Label – Ensure labelling is up to date; this is a good opportunity to fix missing labelling as you re-activate systems.

Step 4: Check – Check lighting systems, including lamps; also check batteries in emergency lighting and UPS systems charging and holding charge. Re-activate security systems.

Remember–Make sure security systems are re-activated.



Life Safety & Fire Systems

Step 1: Notify – Notify insurance company and local fire department to confirm any specific re-activation requirements.

Step 2: Test – Make sure emergency lights are still functional; test emergency generator and essential power circuits.

Step 3: Check – Check diesel fuel tanks for emergency equipment have been filled and quality of fuel; check air compressors for dry sprinkler systems are operating; check that all valves are working and in the correct position; check fire extinguishers.

Step 4: Confirm – Confirm primary emergency and back-up systems operate during mains failure condition; confirm remote monitoring and key-holding arrangements.

Remember–Consider how events are managed and communicated; for example, who will respond to BAS alarms?

Communities are fundamental. Whether around the corner or across the globe, they provide a foundation, a sense of place and of belonging. That's why at Stantec, we always design with community in mind.

We care about the communities we serve—because they're our communities too. This allows us to assess what's needed and connect our expertise; to appreciate nuances and envision what's never been considered; to bring together diverse perspectives so we can collaborate toward a shared success.

We're designers, engineers, scientists, and project managers innovating together at the intersection of community, creativity, and collaboration. Balancing these priorities results in projects that advance the quality of life in communities across the globe. Stantec trades on the TSX and the NYSE under the symbol STN. Visit us at stantec.com or find us on social media.

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