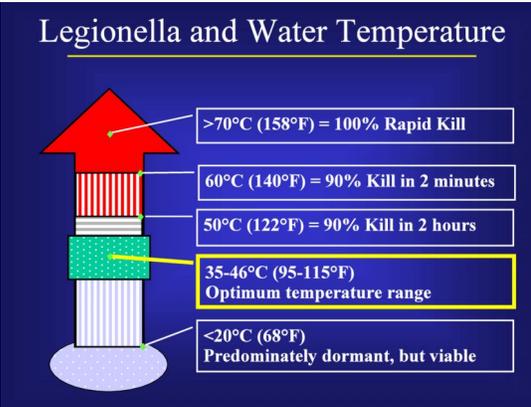


Precautions for Building Reopening After the Pandemic

As our current shelter-in-place orders are gradually lifted and businesses come back online as employees begin to return to work, it is critical to first identify and address any possible building-related issues to ensure the continued health and safety of people who start to reoccupy these spaces. These insights can be applied across all building types (i.e. hospitality, commercial office, retail, etc) and/or partial shutdowns of a bigger building or complex.

Prior to re-opening a building for occupancy, the following systems and processes should be reviewed and evaluated to minimize the potential for building damage and occupant and worker risk:

- **Potable and Non-potable Water Stagnation.** Reduced or minimal usage of water systems during periods of low occupancy can lead to water stagnation or lack of flow. Stagnation can create issues with water quality, including possible microbial growth of organisms like Legionella and Pseudomonas, leaching of lead and other metals, and build-up of particulate or sediment.

	
<p>Tepid water temperature at a bath sink that can be conducive to legionella growth.</p>	<p>Chart showing legionella and water temperature.</p>

- **Mold & Moisture Events.** Flooding, rain, or other water intrusion events that can occur in unoccupied buildings may have gone unaddressed, resulting in water damage or mold growth.
- **Indoor Environmental Quality.** Degraded indoor air quality can be caused by lack of ventilation and circulation of fresh air during low or non-occupancy, which in turn can result in the buildup of indoor air and surface contaminants such as dust, particulates, mold growth, and volatile organic compounds.



- **Food & Chemical Expiration.** When buildings have reduced or no occupancy for extended periods of time (especially when the expected duration of low occupancy is unknown), items such as food, chemicals, and products can expire. The consumption of expired food or the use of expired chemicals or products can lead to health, safety, and/or quality issues.
- **Pest Control.** Standard preventive maintenance such as pest control activities are often postponed or halted altogether in unoccupied buildings. Reduced or minimal maintenance activities can allow for infestation of pests or accumulation of pest allergens, dander, and droppings that can impact indoor environmental quality. Pest waste such as bird and bat droppings can also contain infectious agents, which can pose a potential exposure and health hazard for occupants.

- **Cleaning & Disinfection.** In the current pandemic situation, there are frequent concerns regarding the health status of building occupants or visitors who are accessing the building during the gradual return to normal operations. The potential contamination of surfaces or equipment is likely to be of high concern for occupants re-entering the building and starting up work processes. Prior to and/or during re-occupancy, enhanced cleaning and disinfection procedures may be necessary as a precaution to address any contamination with agents of concern, such as SARS-CoV-2 (Coronavirus).



- **Other Health & Safety Issues.** A variety of other health and safety issues can arise in buildings that are left unoccupied. These issues can include, but are not limited to, electrical and fire safety, unknown odors (sewer gas, etc), hazardous materials spills, and security concerns.
- **HVAC Systems.** Inspecting the HVAC systems prior to resuming normal operation is critical. Proper handling and disposal of HVAC filters and filter replacement is necessary and should be one of the first steps taken along with checking drain pans and cooling coils for microbial growth. Re-establishing HVAC system operation should be next, with a focus on the proper operation of the exhaust systems and ventilation dampers. This should be followed by re-establishing controls in occupancy schedules. It is important to confirm that spaces are being maintained between 72 °F and 75°F and that relative humidity values do not exceed 50 percent. It is recommended to re-evaluate

maintenance on major central HVAC systems and perform maintenance and water quality checks on the cooling tower.

Prior to reopening or occupying a building following extended periods of low or no occupancy, it is essential to perform a comprehensive risk assessment to identify health and safety issues that may impact building occupants. This risk assessment can then be used to develop and implement a plan to address and correct any issues identified. Consider clear, proactive communication with occupants regarding building health and safety upon re-occupancy to address any concerns before they escalate.

The experts at Liberty Building Forensic Group recommend careful planning, consideration, and correction of potential health and safety issues that can arise in unoccupied buildings before businesses return to full functionality. We hope these considerations help you and your organization put in place a plan to support the safety of your people and stakeholders during this challenging time. Please contact us if you have any questions, or if our experts can be of assistance in managing your response.

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