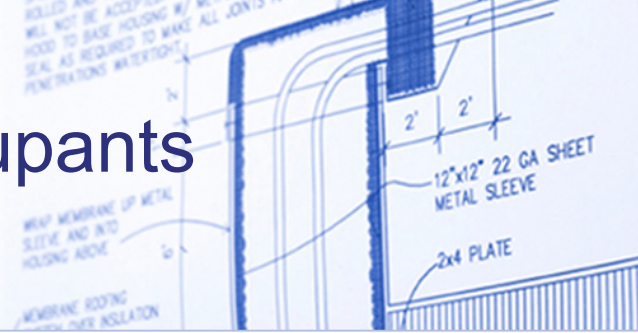


Protecting Building Occupants from Biological Threats



Many Buildings Do Not Have Adequate Protection from Harmful Biological Agents

Many commercial buildings are *not* configured and maintained in ways that effectively reduce occupants' risk of exposure to biological threats, whether from intentionally released or naturally occurring biological agents.

Common building vulnerabilities include:

- Air filters that do not effectively remove biological contaminants from the air—particularly bacteria and viruses
- Filtration systems with reduced efficiency because of improper installation and/or maintenance
- Air intakes that are accessible because they are located at or near ground level and thus are close to potential contamination sources such as loading docks or standing water.

The Risk of Exposure to Biological Agents Can Be Reduced

There are practical steps that owners can take to increase their buildings' protection from biological threats and reduce occupants' risk of exposure to harmful biological agents:

- Seal, caulk, and gasket everything—filter cartridge, retainer bank, tracking, etc.—to minimize filter bypass.
- Commission buildings during design and construction and re-commission routinely to ensure that ventilation systems are operating in line with design intent.
- Increase air filtration to the maximum MERV level that is economically justifiable in order to improve the removal of particulate matter from the air.
- Conduct regular inspections and maintain filter systems correctly to ensure proper functioning of the HVAC system.
- Ensure that maintenance staff has the appropriate training to operate and maintain the HVAC system.
- Tighten the building envelope to reduce the infiltration rate when economically feasible.
- Pressurize the building to reduce infiltration rate when economically feasible.

Note: Recommendations are based on the Center for Biosecurity's Working Group on Reduction of Exposure to Infectious Agents during a Covert Bioterrorism Attack. Changes to buildings, building systems, and operations should not be made if they degrade indoor air quality and comfort under normal operating conditions or in any way interfere with the proper operation of fire protection and life safety systems.

Benefits of Implementing Risk Reduction Measures

- **Reduce potential for harm to building occupants:** Risk reduction measures may reduce occupant exposure to harmful biological agents following an attack, which may prevent illness and death.
- **Protect business interests:** Post-attack business continuity may be improved.
- **Realize immediate collateral benefits:** Available scientific data suggest that risk reduction measures may have additional benefits, such as improved indoor air quality and energy efficiency.

Learn More

Visit Protecting Building Occupants from Biological Threats www.upmc-biosecurity.org/buildings