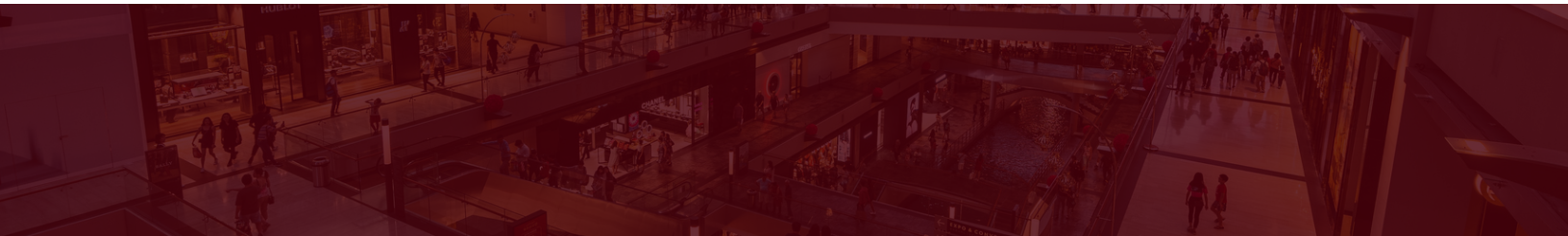
INDOOR AIR QUALITY (IAQ) GUIDE

RAHN INDUSTRIES

The quality and cleanliness of the air we breathe everyday has a significant impact on our health and well-being. Better indoor air quality is a powerful tool to prepare for any type of air quality crisis.

The Indoor Air Quality (IAQ) Guide is a proactive approach to contribute to ensuring the safety of individuals while indoors. The IAQ Guide helps organizational leaders, building owners, and operators of various establishments to evaluate the quality of their indoor air and implement enhancements in ventilation, air filtration, and air cleaning.



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Develop a comprehensive strategy for implementing upgrades and enhancements, which may involve conducting HVAC inspections and performing necessary maintenance tasks.

2. ENHANCE AIR FILTRATION/CLEANING

By implementing measures like enhancing your central HVAC system or installing air cleaning devices, such as HEPA filters, you can effectively improve the air quality.

3. OPTIMIZE FRESH AIR VENTILATION

Introduce fresh outdoor air into indoor spaces and promote its circulation when conditions permit.

4. COMMUNITY EDUCATION

Engage in effective communication with building occupants to enhance their awareness, commitment, and active involvement.

1. CREATE INDOOR AIR ACTION PLAN

- Evaluate the process of bringing clean outdoor air into the building and its distribution to all occupied areas. Gain a comprehensive understanding of the functionality of HVAC systems in your building and document the findings.

- Collaborate with an HVAC specialist to evaluate and inspect ventilation, filtration, and air cleaning systems. Ensure the proper functioning of building systems through commissioning, testing, and balancing.

- Incorporate additional approaches for assessing indoor air quality (IAQ), such as using carbon dioxide (CO2) monitors if necessary.

- Determine the required amount of clean air (outdoor air + filtered HVAC recirculation air) and verify or measure the air delivery for each room or space.

- Evaluate the need for managing air flows in higher-risk areas of the building, such as a school nurse's office.

- Develop an IAQ action plan that encompasses regular inspections and maintenance, including filter replacements, as well as necessary upgrades or improvements to the HVAC system.

- Provide ongoing education and training to individuals responsible for operating and assisting with building and air distribution systems, ensuring their support and proficiency.

2. ENHANCE AIR FILTRATION/CLEANING

- Install air filters that are appropriately sized and have a Minimum Efficiency Reporting Value (MERV) of 13 or the highest rating that the HVAC system can accommodate.

- Seal off any gaps around air filters to minimize air bypassing the filters and ensure that the air passes through them effectively.

- Utilize portable air cleaners in areas where air flow and central filtration are insufficient to enhance air cleaning rates:

- Choose devices that are suitable for the specific space they will be used in, considering their size and consider ENERGY STAR certified products. If noise is a concern, opt for products with the lowest perceived sound levels.

- As a temporary solution, DIY air cleaners can be constructed using HVAC filters and box fans.

- Increase ventilation and/or filtration in areas where there is a higher emission of airborne particles and aerosols (e.g., gyms, cafeterias, or choir/music rooms in schools). You can make adjustments for these areas by:

- Augmenting the delivery of clean outdoor air.

- Employing portable air cleaners.

- Establishing additional exhaust ventilation to directly expel air to the outside.

- Consider implementing an upper-room Ultraviolet Germicidal Irradiation (UVGI) system to clean the air. It is important to engage professionals for the design and installation of UVGI systems in consultation with experts.

3. OPTIMIZE FRESH AIR VENTILATION

- Ensure that outdoor air is sufficiently clean or adequately filtered before it is introduced into the building.
- Utilize economizers effectively, which are devices that supplement mechanical cooling with fresh air, to enhance fresh air ventilation in a cost-efficient manner.
- Keep HVAC systems running during all occupied hours to ensure continuous intake and distribution of clean air throughout the building.
- Verify the proper functioning of exhaust fans in bathrooms and schedule them to operate during occupied hours.
- Increase the amount of clean outdoor air during periods of higher risk, such as times of elevated COVID-19 transmission:
- Adjust HVAC settings while considering factors like thermal comfort, humidity, outdoor air quality, and energy consumption.
- Consider running the HVAC system to refresh the air before occupants' arrival and/or remove residual particles at the end of the day (e.g., 1-2 hours before/after the building is occupied), as necessary.
- Consult with an HVAC specialist to determine the maximum outdoor air intake capacity of your system.
- When feasible and appropriate based on weather conditions, outdoor air quality, occupant safety, and HVAC system capabilities:
- Open operable windows.
- Encourage cross ventilation by opening windows and doors on opposite sides of the room or building. Note that opening windows while running HVAC systems may increase energy costs or introduce other air contaminants.

4. COMMUNITY EDUCATION

- Inform individuals who are affected, such as building occupants, workers, students, teachers, and parents, about the actions being taken to enhance indoor air quality and minimize disease transmission within the building.

- Demonstrate the efforts by organizing building walkthroughs, displaying informative signage, or engaging in communication through social media platforms. These activities help emphasize the significance of individual actions in maintaining optimal facility operations, such as keeping ventilation systems free from clutter.

- Establish feedback mechanisms, such as maintenance request channels, to promptly address repair issues, and utilize surveys to gather perspectives from the community.

- Remember that individual actions and layered prevention strategies remain crucial in reducing the spread of viruses like COVID-19.

Although the recommended actions cannot entirely eliminate poor indoor air quality, they will significantly reduce them.

Implementing measures to enhance ventilation, filtration, and employing other proven air cleaning strategies can effectively lower the risk of exposure to particles, aerosols, and other harmful contaminants. These actions will contribute to improving indoor air quality and promoting the health of individuals within the building.