



Aircuity has been maximizing the health and productivity of buildings' indoor environments for 20 years. Here is how Aircuity fits in with the current recommendations for addressing COVID-19 and what will surely be a heightened movement for healthy buildings such as the increasing adoption of standards like WELL & RESET. We believe that Aircuity will play a prominent role in the post COVID-19 design and healthy building movement.

The following are key HVAC building design features for best in class healthy buildings that are being widely acknowledged:

1. Increased Ventilation
2. Maintaining Optimal Humidity Levels (Between 40-60 RH)
3. Improved Air Filtration
4. Particulate Measurement
5. TVOC Measurement and Control

**D:** Design

**A:** Aircuity Value & Position

#### 1. **Increased Ventilation:**

**D:** Ventilation with outdoor air is vital to diluting airborne contaminants and decreasing disease transmission rates. Many newer buildings reduce outside air to save energy (usually based ONLY on carbon dioxide levels). Recirculating air is now banned in some major cities and being replaced with mandatory DOAS designs. It is understood that ventilating with outdoor air is vital and standards like WELL award clients more points based on how much fresh air they utilize.

**A:** DCV systems are now more important as they ensure that this is done as efficiently as possible. DOAS and HVAC systems can be sized optimally when DCV is deployed. ***Multi-parameter DCV will become more important – even critical or mandatory.***

#### 2. **Maintaining Optimal Humidity Levels:**

**D:** Evidence suggests that viruses survive better in low-humidity environments. Buildings should, if possible, increase humidity to maintain an optimal range of 40 to 60% during peak virus season.

**A:** While potentially beneficial in the short term, these levels can cause long-term maintenance challenges. Accurate measurement and control will yield the most comfortable and healthiest

results. This also increases the need for correctly functioning airside economizing that is enthalpy based, versus dry bulb only. Aircuity's economizer control will work for the building's life cycle.

### 3. **Improved Air Filtration:**

**D:** You can minimize cross-contamination and high particle entry by improving the level of filtration. Most buildings use low-grade filters that may capture less than 20 percent of viral particles, they lack routine maintenance and operators aren't informed when filters are fully loaded or are bypassing.

**A:** Hospitals use MERV 14 and HEPA filters for good reason, they capture the airborne viral particles as small as .3 microns. Higher levels of filtration teamed with particulate measurement can optimize filter changes and better inform when problems exist.

### 4. **Particulate Measurement:**

**D:** New control strategies need to be considered when high OA or RA particle levels exist. Accurate and reliable particle measurement, for respiratory grade particles, correctly located throughout the building interior, is the most effective way to assure the lowest chance for airborne virus spread.

**A:** Adding small particle measurement to the airstream for both pre and post side of the filter banks and looking differentially at space increases in particle levels is the best method for understanding and remediating high particle levels. Separately, concern with events impacting OA has grown in many parts of the world and new control strategies also should be deployed to minimize or more highly filter OA when these conditions occur.

### 5. **TVOC Measurement and Control:**

**D:** Enhanced cleaning protocols and the implementation of more encompassing infection-control plans should occur. This includes regular disinfection of surfaces within buildings, not limited to door handles, handrails, light switches, elevator buttons, restroom fixtures, shared keyboards, water fountains, other commonly touched items, and shared workspaces. Cleaning frequency should be increased along with the strength/concentration of chemicals used.

**A:** This will lead to increased VOC's in the air – building operators need to know where and when the VOC's are in high concentration in the indoor air and adjust ventilation to those spaces to keep air clean and healthy. This will be similar to lab DCV events mitigation that Aircuity has so effectively implemented.

In conclusion, we spend approximately 2000 hours a year in our offices and classrooms. Indoor air frequently has 7 to 10 times the contaminants of outdoor air.

Multi-parameter, centrally monitored DCV is the industry best practice for keeping our buildings' indoor environments as healthy and productive as possible by **optimizing** ventilation and providing real-time insight and intelligence regarding IEQ conditions.

This is not a knee-jerk reaction to current conditions – this is what Aircuity has been delivering for years. Although this is a truly difficult time, Aircuity will be better positioned than ever to assist in the future of making the built environment healthy and safe!