

Filtration to the Forefront

The type and quality of filtration that is installed in a building ventilation system, once almost an afterthought, is coming to the forefront as designers look for ways of improving indoor air quality while simultaneously reducing the energy impact of outside air and the corresponding fan power requirements.

Air filtration is particularly relevant in schools and other academic environments, as schoolboards and their union partners work to determine how to make face-to-face interactions safer in this time of COVID-19. But filtration options are important to anyone trying to balance indoor air quality against other considerations, such as environmental stewardship and the financial impact of building operations.



New filter technologies that were available in the pre-COVID world but hadn't seen industry-wide acceptance are now being implemented more frequently. These technologies address airborne biological contaminants while simultaneously reducing the amount of outside air required and maintaining high levels of indoor air quality.

At Kelson, we use a variety of effective technologies to address these concerns, including:

- High efficiency and low pressure drop MERV 8 and MERV 13 filter media
- Electrostatic high efficiency filters
- Bipolar ionization systems
- High efficiency air scrubbing systems using regenerative sorbent technologies



The appropriate technology will vary depending on whether you are looking to retrofit an existing building or are constructing a new building. Although in some cases the implementation of these technologies is physically straightforward, there are potential impacts that must be carefully considered:

- The air volume that the system can deliver and the resulting power requirements of the HVAC system
- The sequence of operation of the building HVAC systems and how outside air is utilized
- The monitoring systems and trending of data by the building automation system
- The sensors and systems capable of monitoring levels of air contaminants within the building

In our experience, these technologies are implemented most successfully when a qualified team has made a thorough engineering and construction assessment of the building, based on the identified goals and expectations for the systems operation. This process should include:

- A retro-commissioning balancing report to understand the current system operating conditions
- Assessment of the current air handling units and their available capacity to deal with larger pressure drops through higher MERV rated filters
- Current outdoor air intake flow rates and how they compare with ASHRAE 62.1 VRP and IAQ procedure values
- Available space for new equipment
- LEED status of the building's operations
- Review of the current sequence of operation and a review of the trend logs of the system

Contact us here at Kelson to learn more about how filtration technologies can reduce your energy bills, or to ask about having your building assessed.

