

# Meeting IAQ Needs With Enhanced Filtration

The improvement of indoor air quality (IAQ) for a building's zone(s) can be effectively achieved at the initial design stage or at any time during a building's life cycle when the potential introduction of harmful pollutants exists. The American Society of Heating, Refrigerating and Air-Conditioning Engineers Standard 62.1 provides an effective guideline for the designer to navigate through a building's airborne pollution control requirements. Outdoor air (OA) normally established for dilution, in combination with filtration, can effectively control offending contaminants that are deemed to exist in the OA or occupied space. When air purification technologies are appropriately selected and located within air-handling systems, these technologies can provide a significant improvement to the building's overall IAQ, and their cost can be justified with the promotion of high-performance building concepts.

Maintaining acceptable IAQ for a building is a continuous effort. Similar to a building's heating/cooling load fluctuations during the day or season, the contaminant profile will vary as outdoor air pollutants and building occupancy fluctuates during the course of the day. In [Carrier® Engineering Newsletter Volume 5, Issue 1](#) (available at [carrier.com/commercial](http://carrier.com/commercial)), we have considered how to assess a building's IAQ under maximum permissible guidelines during an assumed peak occupancy within the breathing zone – occupied space.

Note: This article is an excerpt from the *Carrier Engineering Newsletter*. To [read the entire article](#) and [subscribe](#) to the Carrier quarterly Engineering [eNewsletters](#), visit [carrier.com/commercial](http://carrier.com/commercial).

It is understood that a building will be under part load conditions thermally for most of its life cycle. Similarly, a building contaminant profile will not always require maximum established OA or filtration, and filter life expectancy can be extended depending on contaminant concentrations and duration.

Building commissioning, performance testing and maintenance play important roles in ensuring selected filtration technologies perform at intended levels throughout their life cycles. Additionally, air cleaning technologies should be tested regularly to ensure long-term performance has not been compromised and other unexpected contaminants are not present or are filtered or diluted appropriately. It is strongly recommended that long-term performance be measured and documented. Implementation of a high-performance building monitoring program will help achieve IAQ goals for the building as part of a total indoor environmental quality strategy.

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