



**June 3, 2024**

Dear, Toronto Board of Health

The Ontario Society of Professional Engineers (OSPE) plays a vital role as the advocacy body and voice of the engineering profession in Ontario. With a current membership of over 85,000 professional engineers, 250,000 engineering graduates, 6,600 engineering post-graduate students and 37,000 engineering undergraduate students, OSPE serves as a unifying force for the engineering community in the province.

We are delighted to offer our response to Toronto Board of Health request for information on enhancing indoor air quality in office buildings. This response represents a collaborative effort from experts within our Indoor Air Quality Advisory Group, who bring a wealth of knowledge and experience in this field.

Our advisory group has carefully considered the challenges and opportunities involved in this area and has developed a comprehensive set of recommendations based on the latest scientific research and best practices.

OSPE believes it is imperative to prioritize clean indoor air quality. Introducing a comprehensive Clean Indoor Air Act aligned with the standards set by ASHRAE 241 is paramount. This act would not only safeguard public health but also ensure a conducive environment for work, study, and leisure activities. By adhering to ASHRAE 241 guidelines, we can establish stringent regulations on ventilation, air filtration, and pollutant control in indoor spaces.

#### **Mitigation of Airborne Disease Transmission:**

Comply with equivalent clean airflow rates from ASHRAE 241 in occupied indoor spaces using any combination of ventilation, filtration, and ultraviolet germicidal irradiation systems. To promote effective ventilation in office buildings, it is crucial to monitor indoor air quality using carbon dioxide sensors. Our recommendation is that offices should comply with the current minimum ASHRAE requirement for outdoor air, which is 8.5 liters per second per person and results in steady-state carbon dioxide concentrations at 1000 ppm. However, to achieve optimal indoor air quality, we suggest that offices increase the outdoor air supply rate by up to 30%, which would correspond to a steady-state carbon dioxide concentration at 900 ppm.

However, to achieve optimal indoor air quality, we suggest that offices increase the outdoor air supply rate by up to 30%, which would correspond to a steady-state carbon dioxide concentration at 900 ppm. This approach can not only improve the overall health and well-being of building occupants but also increase productivity<sup>1</sup>, leading to a net financial gain for businesses<sup>2</sup>.

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<sup>1</sup><https://pubmed.ncbi.nlm.nih.gov/26593933/>

<sup>2</sup>ASHRAE Journal, vol. 44, no. 5, p. 56-58



Indeed, studies have shown that improving indoor air quality can have a significant positive impact on workplace productivity, reducing absenteeism and enhancing employee satisfaction. By prioritizing effective ventilation using carbon dioxide sensors and increased outdoor air supply rates, offices can create a healthier and more productive work environment for their employees.

### **Ventilation in office buildings:**

Bring buildings into compliance with current ventilation standards established by ASHRAE (American society of heating, refrigeration and Air conditioning engineers) and the Canadian Standards Association (CSA) confirmed through CO2 Monitoring.

Exceed minimum ventilation requirements established by ASHRAE and CSA by 30% confirmed through CO2 monitoring.

### **Filtration:**

In addition to ventilation, our recommendation for improving indoor air quality is to use improved filters with a minimum rating of MERV-13 to remove fine particulate matter or PM2.5 from both indoor and outdoor sources, particularly when the ventilation rate exceeds the minimum requirement.

Such measures will significantly mitigate the risks associated with indoor air pollution, including respiratory ailments and airborne diseases. Moreover, this initiative aligns with our commitment to sustainability and environmental stewardship.

### **Conclusion:**

We trust that the suggestions we have provided will be valuable in improving indoor air quality in office buildings. We understand the significance of this issue and the impact it has on the health and wellbeing of occupants, and we appreciate your attention to these recommendations.

OSPE's network of professionals comprises data-driven, practical engineers who thrive in their respective sectors. We welcome the opportunity to meet with you and your office for further discussion regarding this and future matters. Should you need more information, please contact [advocacy@ospe.on.ca](mailto:advocacy@ospe.on.ca).



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A handwritten signature in black ink that reads 'Sandro Perruzza'.

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Chief Executive Officer  
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