

Lidia Morawska

Affiliation: Professor at the Queensland University of Technology (QUT) in Brisbane, Australia, and the Director of the International Laboratory for Air Quality and Health (ILAQH) at QUT

Talk title and synopsis

Ventilation systems for future buildings to mitigate the transmission of infection and ensure good indoor air quality

The COVID-19 pandemic has demonstrated how unprepared the world has been to address the basic question: How can we minimise the risk of airborne infection transmission for any respiratory viruses in a countless number of buildings, where most of the population spends a substantial fraction of the day? This question goes far beyond the current COVID-19 pandemic: every year acute respiratory illnesses, such as colds and influenza infections strike, sicken millions, kill thousands and cause economic losses of billions of dollars. There is little doubt that the way we design, operate, and maintain our buildings influences transmission. This must change, and we envisage that the buildings of the future will be designed and equipped in engineering measures – the key of which are ventilation, supported by air filtration and air disinfection – with a view of mitigating respiratory infection transmission. Further, they will operate in an optimal way to consider all other requirements, including comfort and the control of indoor air quality, and will do it in an energy-efficient way in the context of local climate and outdoor air pollution. The presentation will explore how to turn this vision into a reality.