



ARC Training Centre for Advanced Building Systems Against Airborne Infection Transmission (Thrive)

THRIVE Future Buildings Forum: Energy and Indoor Air Quality

30th April 2024, 9:30am-3pm AEST

VENUE: NSW Government Workplace Hub, Collaboration Area, Level 1, 231 Elizabeth Street, Sydney 2000

**Microsoft Teams: [Join the meeting now](#)
Meeting ID: 254 659 580 939 | Passcode: HhPTkX**

Background: We expect buildings to be filled with clean, healthy air, free of pollutants of any kind, particularly infectious pathogens, and to keep us warm when it's cold outside and cool when it's hot, among many other requirements we have for buildings, our shelters. Energy is needed to meet this requirement. Energy not only costs money, but also involves emissions of pollutants, including greenhouse gases when fossil fuels are used to generate it and the use of resources of diverse nature (for example, rare metals for batteries), which poses a sustainability issue.

Currently, buildings consume about 30% of all the energy consumed by humans. Therefore, we must strive to achieve a balance between all these requirements to breathe clean air and have thermal comfort but consuming the least amount of energy possible and in a resource efficient manner. How to do it?

Panellists will discuss the following big questions:

1. What is the optimal building design(s) to achieve balance in building performance with respect to indoor air quality and thermal comfort and the energy need to support this for specific climate(s)?
2. What additional requirements for building energy will climate change pose with the increased frequency of episodic pollution event, particularly wildfires and their impact on indoor air quality? This will require additional efforts not only to protect people from exposure to outdoor pollutants penetrating indoors, but also to protect collections of sensitive objects.
3. How to optimize public building mechanical systems to address dynamic IEQ risk and carbon emissions objectives.
4. What R&D is still needed?
 - Are all the necessary building engineering technologies available to equip buildings with this objective in mind?
 - New types of materials? Better heat recovery systems? Better monitoring of building performance, indoor air quality and thermal characteristics?
5. What is the role of the building occupants in this process? For example, there is currently a movement against overcooling of buildings: do building occupants or operators do it and why?
6. What is the best way to power buildings, in a broader context of energy in the future (solar, wind, etc); and considering energy efficiency versus unlimited supply of clean energy?
7. How to prepare humanity against a catastrophe such as a meteorite or massive volcanic eruptions that block the sun for years?

This interdisciplinary forum is relevant to experts from many fields and to anyone involved with buildings, from academics to leaders tasked with maintaining a safe and resilient internal environment of schools, offices, art museums, and any space we share with others.

A decorative graphic at the bottom of the page consisting of a grid of blue dots of varying sizes, arranged in a pattern that tapers towards the right side.

AGENDA

Start time	End time	Agenda
9:30am	10:00am	<i>Coffee & Registration</i>
10:00am	10:15am	Welcome and Acknowledgement to Country (Matthew Riley, Director Climate and Atmospheric Science, NSW Department of Climate Change, Energy, the Environment and Water) Introduction to the Forum (Distinguished Professor Lidia Morawska, Queensland University of Technology)
10:15am	10:30am	Presentation: Sohail Hasnie, Former Energy Specialist for Asian Development Bank Presentation Title: "Building Energy Presumption: The Potential of Technology"
10:30am	10:45am	Presentation: Brock Manville, Energy Manager, National Arts Gallery, Washington D.C., USA Presentation Title: "IAQ 2024: Notes from the National Gallery of Art"
10:45am	11:00am	Presentation: Professor Jason Monty (The University of Melbourne) and Professor Geoff Hanmer (University of Technology Sydney) Presentation Title: "Future Prospects and Current Issues in Building Ventilation"
11:00am	11:15am	Presentation: Simon Witts, Director, VA Sciences Presentation Title: "What controls the design"
11:15am	11:30am	<i>Coffee Break</i>
11:30am	1:00pm	Panel Discussion – part 1
1:00pm	1:30pm	<i>Lunch</i>
1:30pm	3:00pm	Panel Discussion – part 2