# Glossary of Key Terms

**Indoor Air Quality & Ventilation in Post-Pandemic Design**

Glossary of Key Terms

- **Air Change Rate (ACH):** The number of times the total air volume in a space is replaced with fresh air within a given hour. Higher ACH generally means better dilution of indoor pollutants.
- **ASHRAE 62.1:** An American standard for ventilation that specifies minimum ventilation rates and other measures to provide acceptable indoor air quality. It often recommends higher rates than typical building codes.
- **Bipolar Ionization:** An emerging air purification technology that generates positive and negative ions which attach to airborne particles, neutralizing pollutants and making them easier to filter.
- **Biophilic Design:** An architectural and interior design approach that incorporates natural elements, materials, and processes into the built environment to improve occupant well-being, including IAQ enhancement.
- **Computational Fluid Dynamics (CFD):** A numerical analysis method used to simulate fluid flow, heat transfer, and related phenomena, often applied to visualize and optimize airflow patterns in buildings.
- **Demand-Controlled Ventilation (DCV):** A smart ventilation system that uses sensors (e.g., $CO_2$, occupancy) to automatically adjust the rate of outdoor air supply based on real-time indoor conditions, optimizing both IAQ and energy use.
- **Energy Recovery Ventilation (ERV):** A system that recovers heat or cool energy from exhaust air and transfers it to the incoming fresh air, reducing the energy load on HVAC systems while bringing in fresh outdoor air.

- **Green Star:** An Australian rating system for sustainable buildings, assessing their environmental impact across various categories, including indoor environment quality.
- **HEPA Filters (High-Efficiency Particulate Air Filters):** High-performance air filters capable of capturing 99.97% of airborne particles as small as 0.3 microns, including fine dust, allergens, bacteria, and viruses.
- **Hybrid Ventilation:** A ventilation strategy that integrates both natural ventilation (e.g., operable windows) and mechanical ventilation systems, often with automated controls to optimize performance based on environmental conditions.
- **Indoor Air Quality (IAQ):** The quality of air within and around buildings and structures, especially as it relates to the health and comfort of building occupants.
- **MERV Filters (Minimum Efficiency Reporting Value):** A rating system that indicates the effectiveness of air filters in capturing airborne particles. Higher MERV ratings (e.g., MERV-13 and above) indicate greater filtration efficiency against smaller particles, including airborne viruses.
- **Mould and Biological Contaminants:** Microorganisms like mould, bacteria, dust mites, and pollen that can grow in damp, poorly ventilated indoor environments and cause respiratory issues, allergies, and infections.
- **NABERS (National Australian Built Environment Rating System):** A national rating system that measures and rates the environmental performance of Australian buildings, including indoor environment quality.
- **NCC 2022 (National Construction Code 2022):** Australia's uniform set of technical provisions for the design and construction of buildings, including minimum ventilation and air quality requirements.
- **Particulate Matter (PM2.5, PM10):** Microscopic airborne particles that can be inhaled and cause health problems. PM2.5 refers to particles 2.5 micrometers or less in diameter, while PM10 refers to particles 10 micrometers or less.
- **Photocatalytic Oxidation (PCO):** An advanced air purification technology that uses UV light and a catalyst (e.g., titanium dioxide) to break down Volatile Organic Compounds (VOCs) and other pollutants into harmless substances.
- **RESET Air Certification:** A performance-based indoor air quality standard that requires continuous air quality monitoring using sensors to verify compliance with specified IAQ metrics in real time.

- **UV-C Air Disinfection (UVGI):** Ultraviolet Germicidal Irradiation (UVGI) technology that uses short-wavelength ultraviolet light (UV-C) to kill or inactivate microorganisms like bacteria, viruses, and moulds by destroying their DNA/RNA.
- **Volatile Organic Compounds (VOCs):** Organic chemicals that have a high vapor pressure at ordinary room temperature, emitted as gases from certain solids or liquids (e.g., paints, cleaning products, furnishings), and can cause various health effects.
- **WELL Building Standard:** A global rating system that focuses on advancing health and well-being in buildings. It includes comprehensive criteria for air quality, thermal comfort, light, and other factors impacting occupant health.
- **Zonal Ventilation:** A strategy where ventilation is controlled independently for different zones or areas within a building, allowing for tailored airflow based on occupancy, activity, or specific air quality needs in those areas.