HVAC *Definitions*

“Unwanted airborne constituents that might reduce acceptability or adequacy of the air quality.”

Air contaminants

“Air that escapes from or to a building through a joint, coupling, junction, or the surfaces which enclose the building. The flow of uncontrolled air within a building through cracks or openings.”

Air leakage

“Share of supply air that is outdoor air, plus any recirculated air that has been filtered or otherwise treated to maintain acceptable indoor air quality.”

Air ventilation

“Amount (volume) of air delivered to a space through ventilation, typically specified in litres per second or cubic metres per minute.”

Air volume

“Physical barrier between the exterior and the conditioned environment of a building to resist air, water, moisture, heat, cold, light, and noise transfer. For an air-conditioned building, the building envelope comprises the elements of a building that separate conditioned spaces from the exterior. Crown extensions to the façade to cover plant screen cladding are part of the building envelope. The building envelope does not include the physical barrier below ground.”

Building envelope

“Computer- based control system which controls and monitors the mechanical and electrical equipment in a building, such as ventilation, lighting, power systems, fire systems, and security systems, or controls and monitors a number of buildings.”

Building management system (BMS)

“All necessary services required to operate the building such as plumbing, mechanical, electrical and others.”

Building services

“Quality-oriented process for achieving, verifying, and documenting that the performance of facilities, systems, and assemblies meets defined objectives and criteria.”

Commissioning

“Process through which a gas or vapour changes to liquid form. Also defined as the water which is produced in this process.”

Condensation

“Localized controls that allow users to change/adjust the level of lighting and air-conditioning in a space.”

Control systems

“Coiled arrangement of tubing or pipe for the transfer of heat between a cold fluid and air.”

Cooling coil

“Amount of cooling that a building will require to meet the conditions specified by the Authority. The cooling load is determined by the output of the heat load calculation required by the Authority.”

Cooling load

“Difference between the leaving water temperature and the entering air wet- bulb temperature in a cooling tower.”

Cooling tower approach

“Ventilation system that provides for the automatic reduction of outdoor air intake below design rates, when the actual occupancy of spaces served by the system is less than design occupancy. Demand is often assessed by measuring the amount of carbon dioxide (CO2) in a space to reflect occupancy levels.”

Demand controlled ventilation (DCV)

“Relates to the thermal characteristics of the building envelope, temperature swings and occupancy load.”

Diversity factor

“Airtight devices that carry conditioned air throughout the building. This includes terminal fixtures to distribute air.”

Ductwork

“Escape of air through cracks and gaps when air-conditioning ductwork is not airtight. Ductwork leakage results in an increase in energy consumption of supply and return air fans.”

Ductwork leakage

“Air removed from a building space and discharged to the outside of the building through a mechanical or natural ventilation system.”

Exhaust air

“Contribution of greenhouse gases released to the atmosphere in the global warming phenomenon.”

Global warming potential (GWP)

“Process of calculating the total heat generated inside the building by various sources.”

Heat load calculation

“Equipment, distribution systems, and terminals that provide either individually or collectively, the processes of heating, ventilating, or air- conditioning to a building or a portion of a building.”

Heating, ventilation and air-conditioning system (HVAC)

“Air deliberately brought into the building from the outdoors and supplied to the vicinity of an exhaust hood to replace the air and cooking effluent being exhausted. Make-up air is generally filtered and fan- forced, and it can be heated or cooled depending on the requirements of the application.”

Make-up air (dedicated replacement air)

“Those systems within a building which include components of mechanical plant or machinery. These systems include, but are not limited to, the HVAC system of a building.”

Mechanical system

“Ventilation provided by mechanically powered equipment, such as fans.”

Mechanical ventilation

“Filtering efficiency of an air filter that has been evaluated using the ASHRAE 52.2 test procedure. The performance of an air filter is determined by comparing airborne particle counts upstream and downstream of the air filter (or other air cleaning device) under test conditions. A higher MERV rating equates to higher air filtration efficiency.”

Minimum efficiency reporting value (MERV)

“Combination of mechanical and natural ventilation.”

Mixed mode ventilation

“Equipment used to measure, and record status or conditions related to a building or to verify pre-set conditions and provide control or alarm functions if conditions vary.”

Monitoring equipment

“Ventilation provided by thermal, wind or diffusion effects through windows, doors, or other openings in the building.”

Natural ventilation (passive ventilation)

“Pressure less than that in adjoining spaces.”

Negative pressure

“Device that detects the presence or absence of people within an area and causes lighting, equipment, or appliances to be regulated accordingly.”

Occupancy sensor

“Outside air supplied to a building space through mechanical or natural ventilation to replace air in the building that has been exhausted.”

Outdoor air

“Working fluids of refrigeration cycles, which absorb heat at low temperatures and reject heat at higher temperatures.”

Refrigerants

“Outdoor air that is used to replace air removed from a building through an exhaust system. Replacement air can be derived from one or more of the following: make-up air, supply air, transfer air, and infiltration. However, the ultimate source of all replacement air is outdoor.”

Replacement air

“Ratio of partial density of water vapour in the air to the saturation density of water vapour at the same temperature and the same total pressure.”

Relative humidity

“Static pressure difference between the adjacent spaces of a building, with the air tending to move from higher-pressure spaces to lower- pressure spaces.”

Space pressurization

“Air entering a space from an air- conditioning, heating, or ventilating system for the purpose of comfort conditioning. Supply air is generally filtered, fan-forced, and heated, cooled, humidified, or dehumidified as necessary to maintain specified temperature and humidity conditions. Only the quantity of outdoor air within the supply air flow is used as replacement air.”

Supply air

“Condition of mind which expresses satisfaction with the thermal environment. The thermal comfort measurement is subjective in nature as it depends on environmental and personal factors.”

Thermal comfort

“Materials/products or the methods and processes used to reduce heat transfer. Heat energy can be transferred by conduction, convection or radiation. The flow of heat can be delayed by addressing one or more of these mechanisms and is dependent on the physical properties of the material employed to do this.”

Thermal insulation

“Rate of transfer of heat through a material(s) or assembly, expressed as a U-value.”

Thermal transmittance

“Virtual separation of the floors in the buildings based on the elevator groups, such that the elevators serving one zone do not serve the other zone.”

Zoning