Glossary

CONDUCTION:

Takes place through the contact between adjacent layers of solid materials. The process unfolds in time, affecting layers of materials sequentially, and gives rise to heat storage within the fabric of building elements.

The rate of heat transfer depends on thermal conductivity.

CONVECTION:

Is the process governing air movement and ventilation, including heat flows to the outside through open windows and cracks in the construction; exchanges between adjacent spaces through open doors; and thermal exchange between room surfaces and air.

RADIATION:

process of heat transfer by electromagnetic waves; internal and external building surfaces both emit as well as absorb radiation.

The presence of any heat source in a room will incite exchanges between all the surfaces enclosing that space. Storage of heat in the fabric of materials is followed, eventually, by outward flows driven by conduction through solid layers and by convection and radiation from the surfaces of the elements. Heat flow by conduction though solid internal partitions, which are generally of low insulation value, can transfer part of the stored hear to adjacent spaces. Transfers by radiation are towards other room surfaces.

EVAPORATION

Evaporation is the process by which water changes from a liquid to a gas or vapor. Evaporation is the primary pathway that water moves from the liquid state back into the water cycle as atmospheric water vapor.

STACK VENTILATION

Stack ventilation and Bernoulli's principle are two kinds of passive ventilation that use air pressure differences due to height to pull air through the building. Lower pressures higher in the building help pull air upward. The difference between stack ventilation and Bernoulli's principle is where the pressure difference comes from.

Stack ventilation uses temperature differences to move air. Hot air rises because it is lower pressure. For this reason, it is sometimes called buoyancy ventilation.

NATURAL VENTILATION

Natural ventilation, also called passive ventilation, uses natural outside air movement and pressure differences to both passively cool and ventilate a building.

VENTURI EFFECT

The Venturi effect is the phenomenon that occurs when a fluid that is flowing through a pipe is forced through a narrow section, resulting in a pressure decrease and a velocity increase. The effect is mathematically described through the Bernoulli equation and can be observed in both nature and industry. Many industry applications rely on this effect as they need to be able to predict a fluid’s reaction when flowing through constricted piping.