

Glossary

Heat

- **Convection:** The movement of air caused by warm air rising and cool air sinking, creating a continuous circulation of heat.
- **Conduction:** The transfer of heat through a solid material or between solids in direct contact, like heat moving from a hot roof into an attic.
- **Low Thermal Conductivity:** A property of materials that slows down the transfer of heat, like insulation, which help keep heat in or out of a building.
- **Radiation:** The transfer of heat through infrared waves that can move energy across empty space without needing air or solid materials.
- **Thermal transmittance:** is the rate at which heat passes through a building element, accounting for both conduction and convection.
- **U-value:** is the numerical measure of thermal transmittance, indicating how well a material resists heat flow—the lower the value, the better the insulation.
- **Thermal Bridge:** A part of a building where heat escapes more easily due to - high conductivity materials or construction that bypass insulation.

Moisture

- **Interstitial Condensation:** Moisture that forms and becomes trapped inside walls, roofs, or other hidden layers of a building, often going unnoticed until it causes visible damage like mould or structural decay.
- **Vapour Diffusion:** The slow movement of water vapour through materials from areas of high moisture concentration to low concentration.
- **Capillary Action:** The movement of liquid moisture through tiny pores or gaps in materials, often against gravity.
- **Dew Point:** The temperature at which air becomes fully saturated with moisture, causing water vapour to condense into liquid.
- **Permeability:** A measure of how easily a material allows water vapour to pass through it.
- **Mu-Value (μ -value):** A number that shows how resistant a material is to vapour diffusion compared to air; higher values mean greater resistance.

Sound

- **Airborne Transmission:** The movement of sound through the air, such as voices or music, which travels from one space to another and passes through walls, floors, or ceilings.
- **Impact Transmission:** Sound that is created by physical contact or vibration with a surface—like footsteps or moving furniture—and travels through the structure of a building.
- **Flanking Transmission:** The indirect movement of sound through connected building elements (like floors, ceilings, or walls), bypassing the main barrier designed to block noise.
- **Reflection (of sound):** When sound waves bounce off hard, smooth surfaces—like walls or ceilings—causing the sound to remain in a space and potentially make it louder or less clear.
- **Absorption (of sound):** When sound is taken in by soft or porous materials—like carpets or acoustic panels—reducing the amount of sound that bounces around a room and making it quieter.
- **Sound Reduction Index (R):** A measure of how well a building element (like a wall, floor, or door) can block sound from passing through it—higher values mean better sound insulation.
- **Noise Reduction Coefficient (NRC):** A rating that shows how much sound a material can absorb (rather than reflect)—higher numbers indicate better sound absorption and quieter spaces.

Energy

- **Energy Efficiency:** A measure of how effectively a building uses energy, comparing the amount of energy consumed to the services delivered—such as heating, cooling, or lighting
- **MVHR (Mechanical Ventilation with Heat Recovery):** A whole-house ventilation system that supplies fresh air and removes stale air while recovering heat from the outgoing air to improve energy efficiency.
- **Operational Energy:** The energy a building uses during its day-to-day operation—for heating, cooling, lighting, hot water, and appliances.
- **Embodied Energy:** The total energy used to extract, process, transport, and install building materials, as well as to repair and maintain them over the building's life.