

Infiltration

Infiltration refers to the uncontrolled entry of outdoor air into a building through cracks, gaps, and openings in the building envelope. This phenomenon occurs without the intention of the occupants and is primarily due to pressure differences between the inside and outside of the building.

Infiltration is often considered an unplanned and unwanted form of ventilation. It can significantly impact the energy efficiency of a building by increasing heating and cooling loads. For instance, during winter, cold air may seep into a building, forcing heating systems to work harder to maintain comfortable indoor temperatures. Conversely, in summer, warm outdoor air can infiltrate, leading to increased cooling demands.

In a typical UK house, the presence of gaps around windows and doors, or poorly sealed joints in construction, can lead to significant infiltration. For example, a house built with traditional methods may have higher infiltration rates compared to modern, well-sealed constructions. During a retrofit project, addressing infiltration through measures such as sealing gaps with weather stripping or applying airtight membranes can enhance energy efficiency and comfort.