

## AIR LEAKAGE

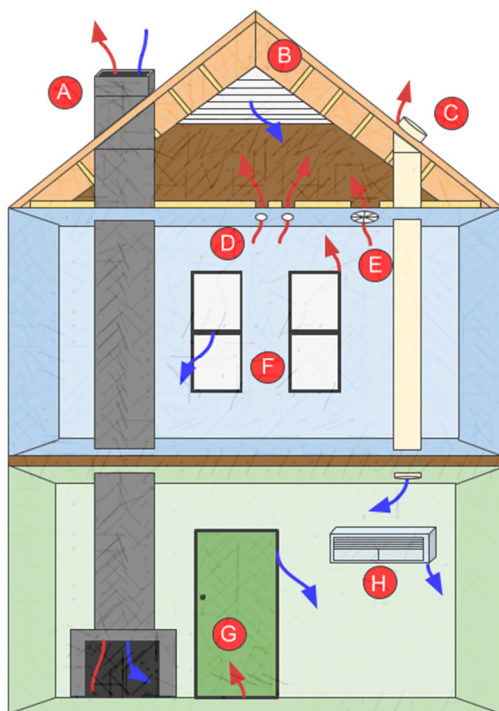
Air leakage is the unintentional introduction of outside air into a building or extraction of air from within a building, typically through holes and gaps in the building envelope.

Both air infiltration and air exfiltration can cause substantial heat gains and losses and can also cause condensation which may lead to mould.

Air leakage typically occurs when there are pressure differences both within the building and the outside environment due to external wind, mechanical ventilation and indoor/outdoor temperature differences (stack effect)

Wind creates a positive pressure on windward faces and negative pressure on the opposing face, which pulls air out of the building through unsealed openings.

Mechanical ventilation such as exhaust fans and range hoods can generate large negative air pressures causing unwanted airflow through the building.



Stack effect is the result of air buoyancy. This occurs due to a difference in indoor and outdoor air density causing warm air to rise and escape through ceiling penetrations such as downlights and ventilation openings.

Sealing your home against these air leaks can reduce your heating and cooling energy usage by up to 25%.

- A** Chimneys
- B** Vented gable
- C** Sky lights
- D** Downlights
- E** Exhaust fans
- F** Windows
- G** Doors
- H** Wall penetrations

## SOLUTIONS

- Use a caulking gun to seal all gaps and cracks.
- Install draught seals around doors and windows.
- Install sealed downlights and self closing dampers to exhaust fans.
- Install a vapour barrier to the roof and walls.
- Block chimneys with a damper and cover roof ventilators when not in use.
- Consult a professional to conduct thermal imaging or a blower door test.