

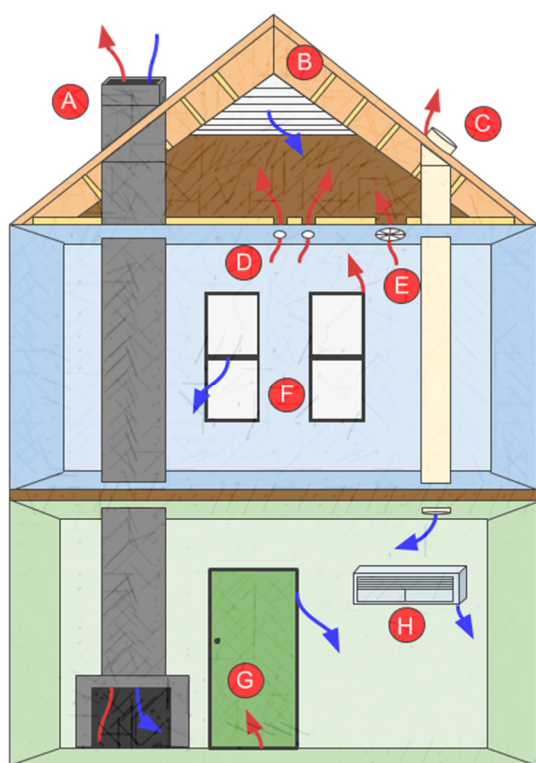
## AIR LEAKAGE

Air leakage is sometimes called infiltration, which is the unintentional or accidental introduction of outside air *into* a building, typically through gaps in the building envelope. Exfiltration is the extraction of air *from* a building, which typically occurs during winter when heated air either escapes or moves into cold cavities, forming condensation and mould.

Air leakage typically occurs when there are pressure differences both within the building and the outside environment due to external wind, mechanical ventilation systems and “stack effect”.

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

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 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.