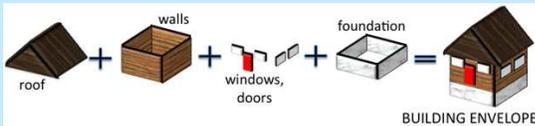


## What is a Building Envelope?

Imagine a building as a big container made up of the outside walls, windows, doors, roof and basement. Inside this container or “envelope” is air that is heated or cooled, and an area protecting people from weather and noise. For us to be comfortable, the envelope must control the flow of heat, air and moisture from the inside to the outdoors.

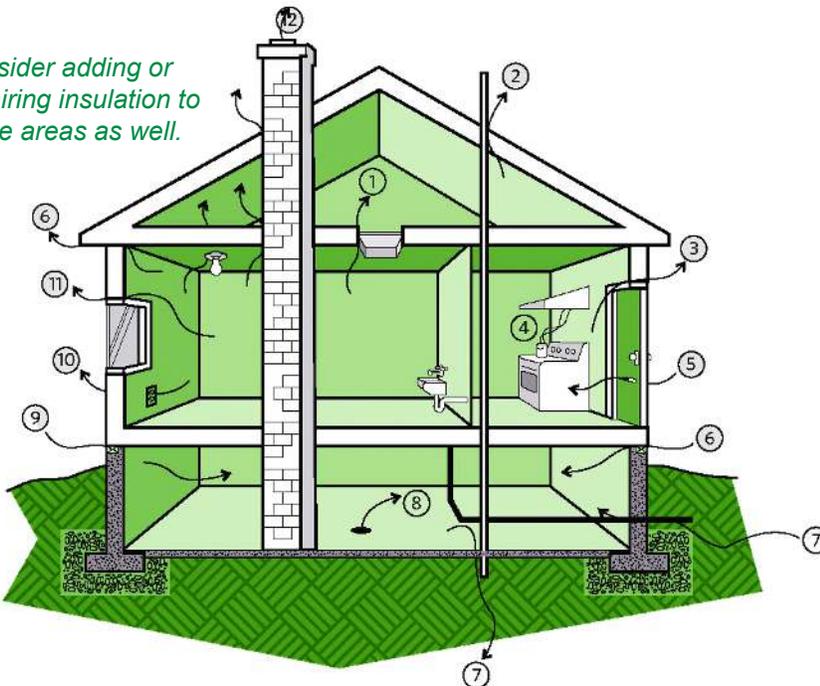


## Why Improve Your Building Envelope?

### “Build it tight, vent it right.”

Air sealing ensures that all the effort put into making your home warm and comfortable, doesn't go out the window (or through the walls, ceiling, or foundation) due to leaks that create an unwanted exchange of inside and outside air, heat, and moisture.

*Consider adding or repairing insulation to these areas as well.*



<https://www.nrcan.gc.ca/energy-efficiency/energy-efficiency-homes/how-can-i-make-my-home-more-ener/keeping-heat/keeping-heat-chapter-4-comprehensive-air-leakage-control/15635>

## Why Does That Matter?

- Air leakage accounts for about 20% to 40% of heat loss in a home (\$600 to \$2400 per year) - not to mention the cost to the environment.
- Air leakage is the biggest cause of outside air drafts, hot/cold spots, and other air movement problems.
- Air leakage is often the largest cause of moisture problems, especially mould and mildew.

## Home Air Sealing Inventory

There are many areas of a home that can cause air leakage. Look at the diagram below for the areas most commonly to blame. In order to seal these openings, you can apply:

- weatherstripping - seals gaps around moving parts such as doors and windows
- caulking/spray foam - seals gaps where nothing moves

### Added Benefit

Sealing air leaks also helps seal out insects and other pests.

## Where To Look For Leaks

*Anywhere there is a break in your building envelope:*

1. attic hatch
2. ceiling penetrations into the attic (including light fixtures)
3. exterior doors
4. exhaust vent
5. mail slot
6. sill and header
7. service entry (plumbing/electrical)
8. floor drain
9. foundation crack
10. electrical outlet
11. window
12. chimney

## Useful Link

[Air Leakage Control - Natural Resources Canada](#)

## If You Are Renovating

### Outside - Add or Upgrade an Air Barrier

- Sometimes called a weather barrier or house wrap, an air barrier is sheeting found underneath the exterior shell of the home, such as vinyl siding, stucco or brick.
- This protects the structure from damage, while preventing water vapour from being trapped in the wall and allowing it to evaporate to the outside.

### Inside - Add or Upgrade a Vapour Barrier

- Found on the inside of a building's frame and insulation, it blocks water vapour from the building going into the wall.
- In order to prevent this condensation from forming, a vapor barrier should be placed on the warm side of your insulation. This way the warm, moist air never reaches the cold surface inside your wall.