

A Quick Guide to Sealing Your Building's Envelope

Why start here? Losses due to air leaks typically account for 10% to 14% of building energy use: they're like leaving a window wide open.

1. Find the Leaks

Volunteers can:

- Ask staff which areas are uncomfortable.
- Use an infrared thermal leak detector (@ \$30) when there's at least 10°F difference between outside & inside or a stick of incense on a windy day to help pinpoint leaks.
- Look for commonly-found gaps such as:
 - **around** windows, doors, attic hatches, whole-house fans, recessed light fixtures, chimneys, furnace flues, vents, ducts or wires that enter the building or go from lower to upper levels;
 - **above** dropped or false closet ceilings;
 - **in** bathroom and kitchen exhaust vents, make-up air vents or dampers, pipes;
 - **where** building additions connect or stains from years of air movement are found on carpet near baseboards or on the ceiling near moldings;
 - **behind** outlets on exterior walls.

Then generate a list of needed fixes.

Professional auditors can:

- recognize common problems & causes;
- look in hard-to-access areas;
- do a blower door test;
- use a thermal camera & interpret its images.

A professional audit often pays for itself quickly through energy savings – if you act on the findings!

2. Seal the Leaks

Prioritize items on your list that:

- are low-cost.
- will generate quick energy savings.
- will generate large energy savings and / or
- can be handled by volunteers.

Ask for volunteers to do much of the work:

- Ask building professionals in your congregation to direct unskilled volunteers in simpler tasks.
- Make a plan, gather tools and supplies.
- Volunteers can help weather strip, seal attic hatch, caulk small leaks, and insulate outlets.
- Larger gaps can be sealed with expanding foam; cracks/gaps under ¼", with caulk.
- Keep volunteers safe:
 - Be sure those working in attic: know where it's safe to step and to watch for exposed nails, have good light; are flexible and strong; wear an OSHA-approved respirator or dust mask in dusty or dirty areas.
 - Be sure ladders are steady.
 - In summer, work early before attic gets hot.
- Download the ENERGY STAR Do-It-Yourself guide (follow this link or use the "search" box at the ENERGY STAR website) for tips:
http://www.energystar.gov/index.cfm?c=diy.diy_index

Professionals may be needed to:

- Seal and insulate hard-to-access areas like above dropped ceilings, in attic, at ductwork, and along high exterior walls.
- Repair and seal major cracks/joints.

3. Find the Funds

- Frame repairs as investments: determine & communicate costs, savings and payback period.
- Ask leadership to:
 - set aside a percent of budget for energy conservation;
 - add items to next capital campaign;
 - reinvest energy savings.
- Research and apply for utility incentives & rebates while planning needed work.
- Budget for future building upgrades.

