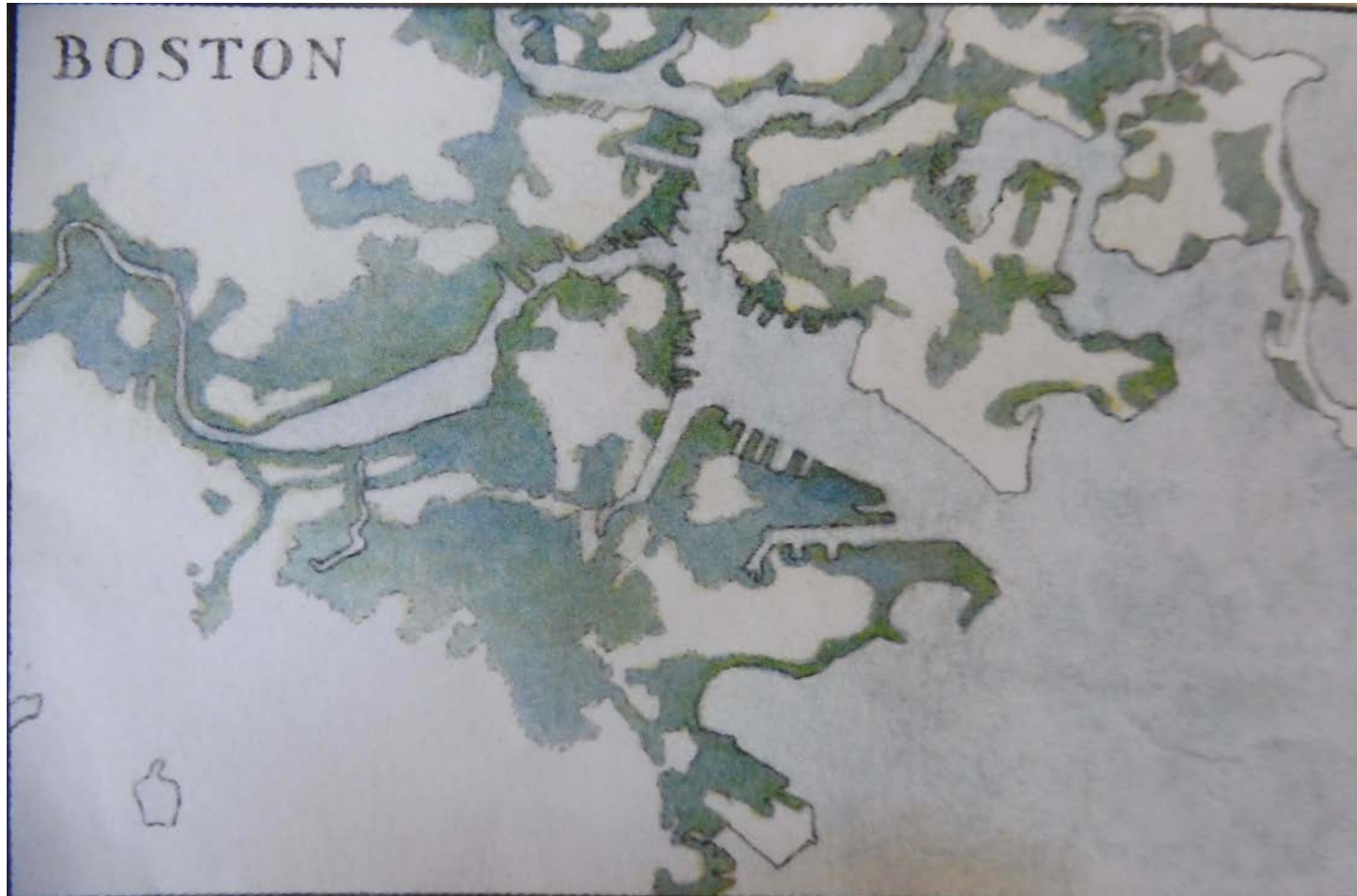


Air-sealing a Flat Roof “Attic”

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Why air-seal?



GRASP this:

- Building Science performed in 1992
- 40 buildings air-sealed and cellulosed vs. 40 buildings only cellulosed but no sealing
- No moisture issues even 25 years later- even on the un-air-sealed buildings

Get on your spelunking gear



Are you in shape?

- 10 sit-ups a day
- 1 push –up
- Get on the floor and start dragging your self around by the arms for practice.

CAT WALKS?



Respirator, goggles, hat, gloves, HOP



You need this



And this



To Find the Leaks

Either this...



...or this



To Fix the leaks





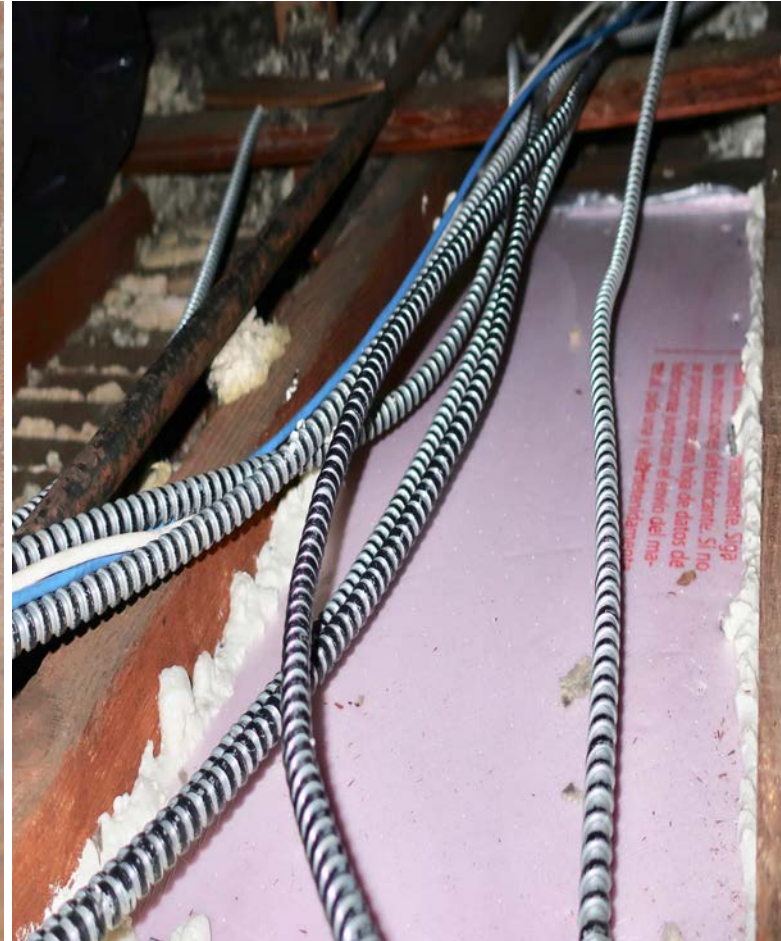
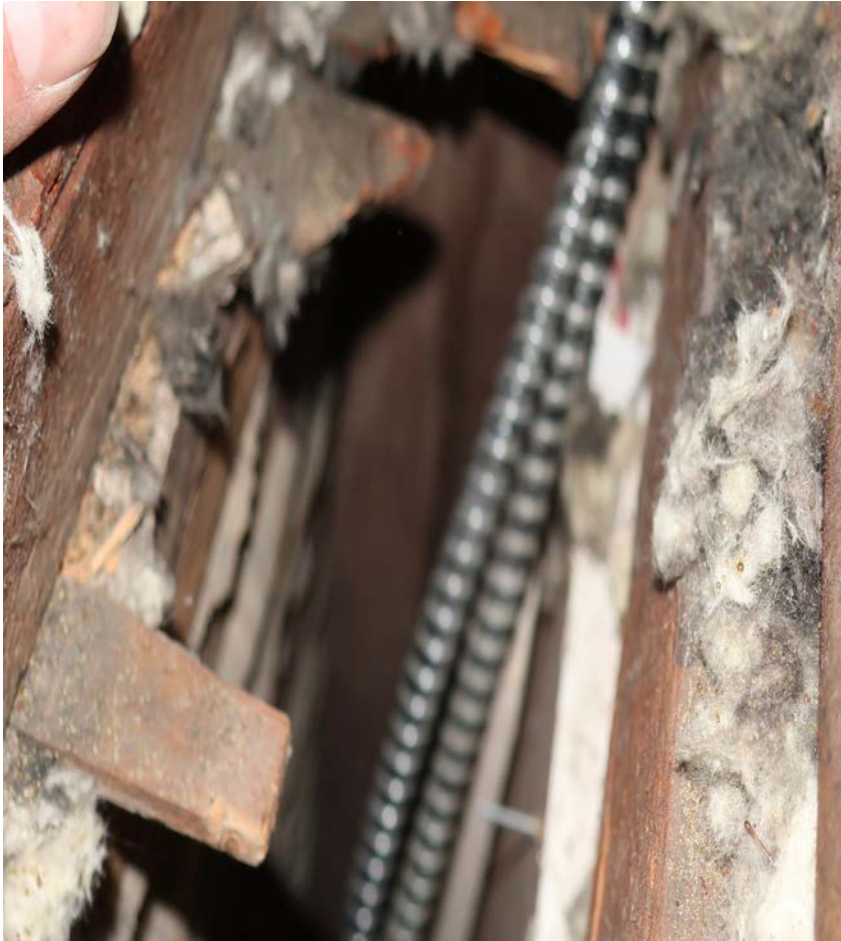








Assist Wall

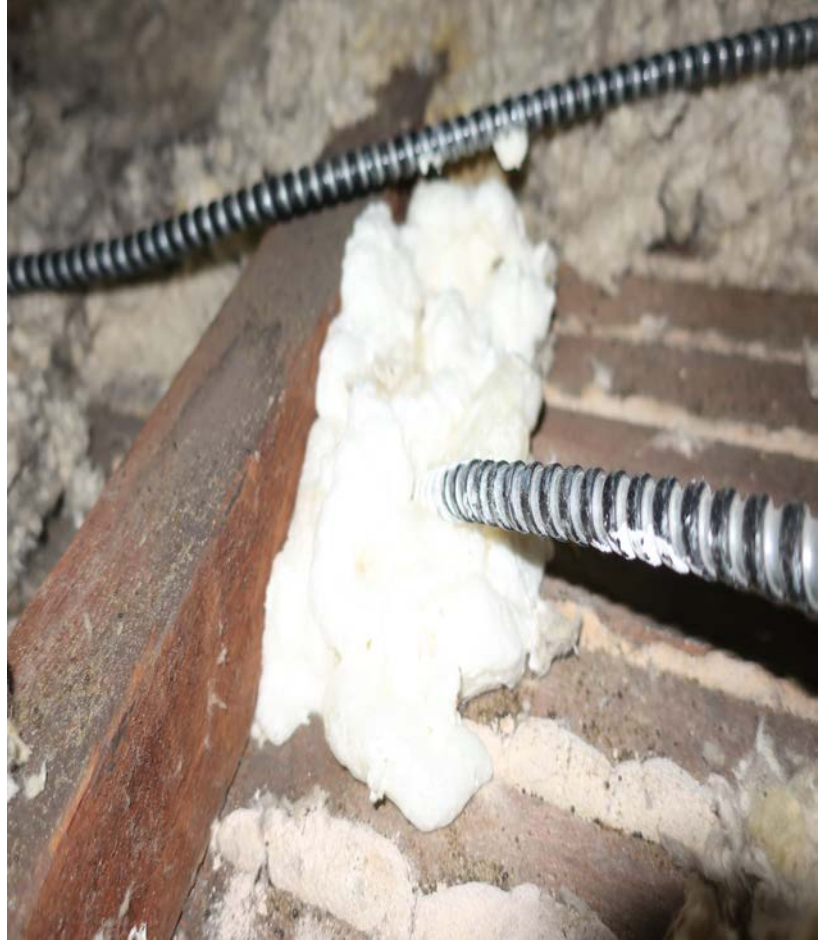




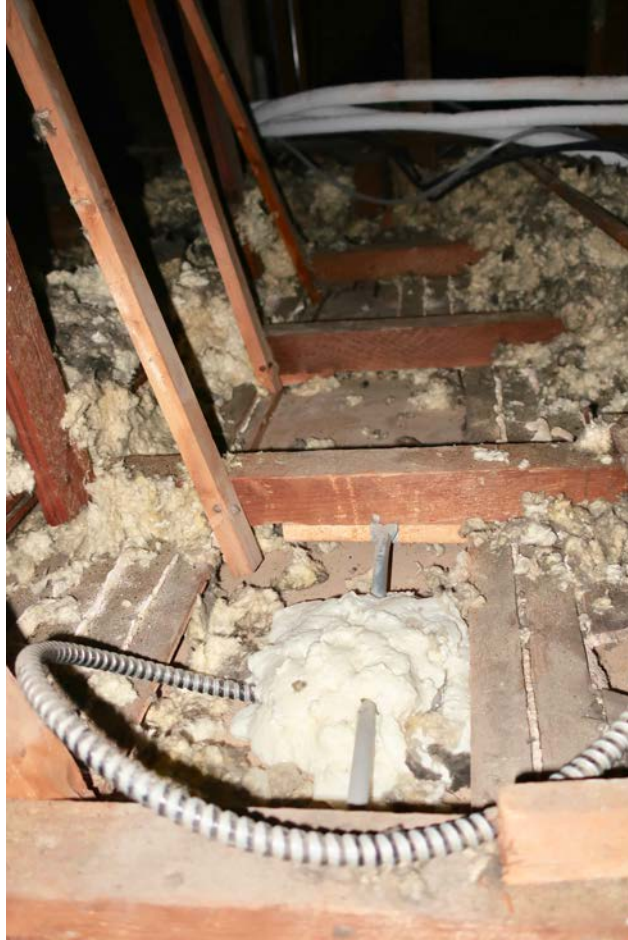


































Chimney





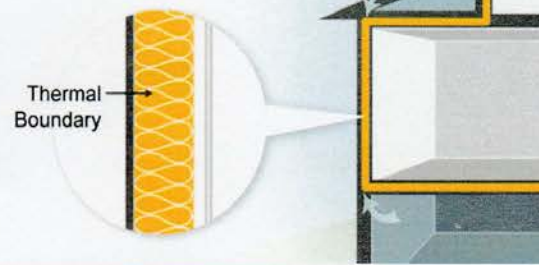
Thermal Boundary

U.S. DEPARTMENT OF
ENERGY | Energy Efficiency &
Renewable Energy

ENERGY MOVEMENT

The Thermal Boundary:

- Limits heat flow between inside and outside.
- Easy to identify by presence of insulation.
- The location of insulation in relation to other building components is critical to its effectiveness.
- Even small areas of missing insulation are very important.
- Voids of 7% can reduce effective R-value by almost 50%.



The thermal boundary

- Limits heat flow between inside and outside by reducing conductive heat loss through the building envelope.
- Is easy to identify by the presence of insulation.

The location of insulation in relation to other building components is critical to its effectiveness. When air passes through insulation, it carries heat and moisture away.

- Even small areas of missing insulation must be remedied.
- Voids totaling 7% can reduce the effective R-value by almost 50%. The effective R-value in the attic of a 1,000-square-foot secondary garbier insulated to R-38 falls to an effective R-value of 19 when 70 square feet of insulation is pulled aside.

The thermal boundary is the insulation. Common materials include fiberglass bats,

















Bath Fan & Recessed light







Cellulose

- Dense-packing where access is too tight
- GRASP Project Energy Savings
- GRASP Project lack of moisture issues 25 years later!!!!!!

10 from Jason's Air-Sealing Check List

- 1. Chimneys
- 2. Recessed Lights
- 3. Bathroom Fans
- 4. Stink Pipes
- 5. Wet Walls/ All Wall Tops (Top Plates)
- 6. Duct Work
- 7. Attic Entrances
- 8. Gable Ends
- 9. Surprises
- 10. Junction Boxes

Vertical Thermal Boundaries

Dropped Soffits



Ceiling Height Changes



Knee-walled Spaces



