## Old Home, Healthy Home!



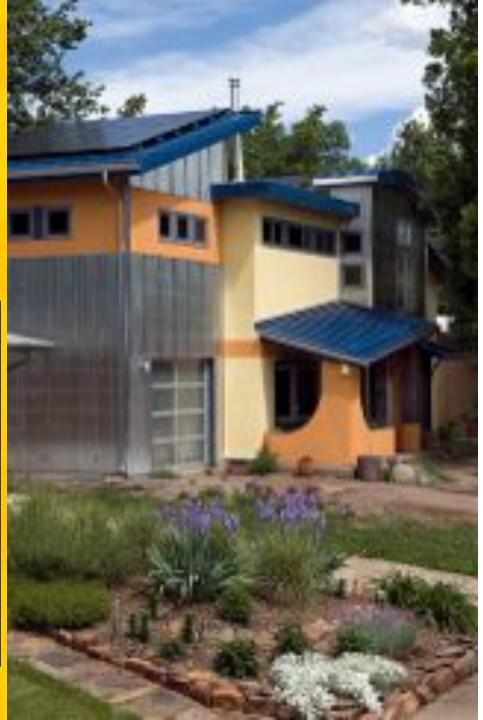
Bill Lucas-Brown
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Steamboat Springs & Denver, Colorado



## What is healthy?













#### What questions or concerns do you have?

•		
•		
•		
•		
•		
•		
•		
•		



## How do we prioritize?

- Risk?
- Cost?
- Air Quality?
- Energy Efficiency?
- Other?



(You need to gather information first)

#### Start with complete audit

- CO Testing
- Radon
- Moisture/Mold
- Air Leakage
- Insulation
- Duct Leakage
- HVAC Assessment
- Asbestos
- Lead Paint





(Prescription without diagnosis is malpractice!)



#### Carbon Monoxide



"Every year more than 500 Americans die from accidental exposure to carbon monoxide and thousands more across the U.S. require emergency medical care for non-fatal carbon monoxide poisoning."

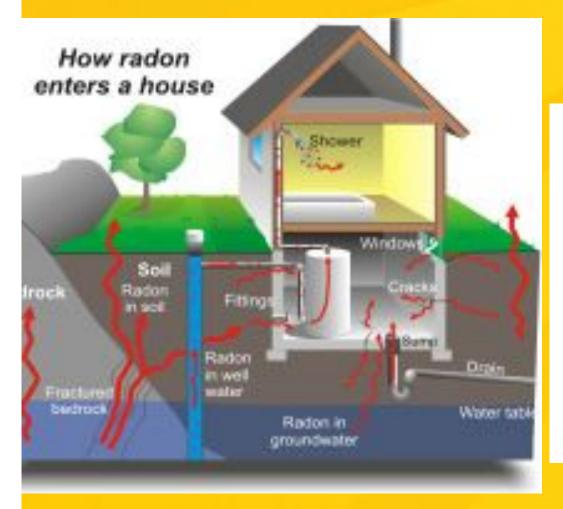
- Florida Department of Health

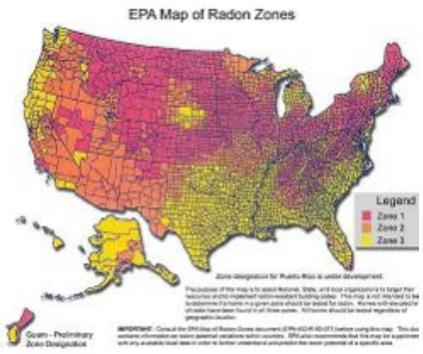






#### Radon







# Test & Mitigate





Radon #2 cause of lung cancer = 21,000 deaths/year



#### Moisture/Mold

Food, moisture, & heat...



Remove one...

No mold



#### Exposed earth test







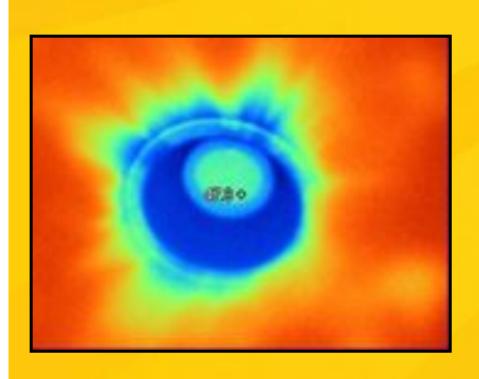




### Air Leakage



## Air leaks in and out, but from where?



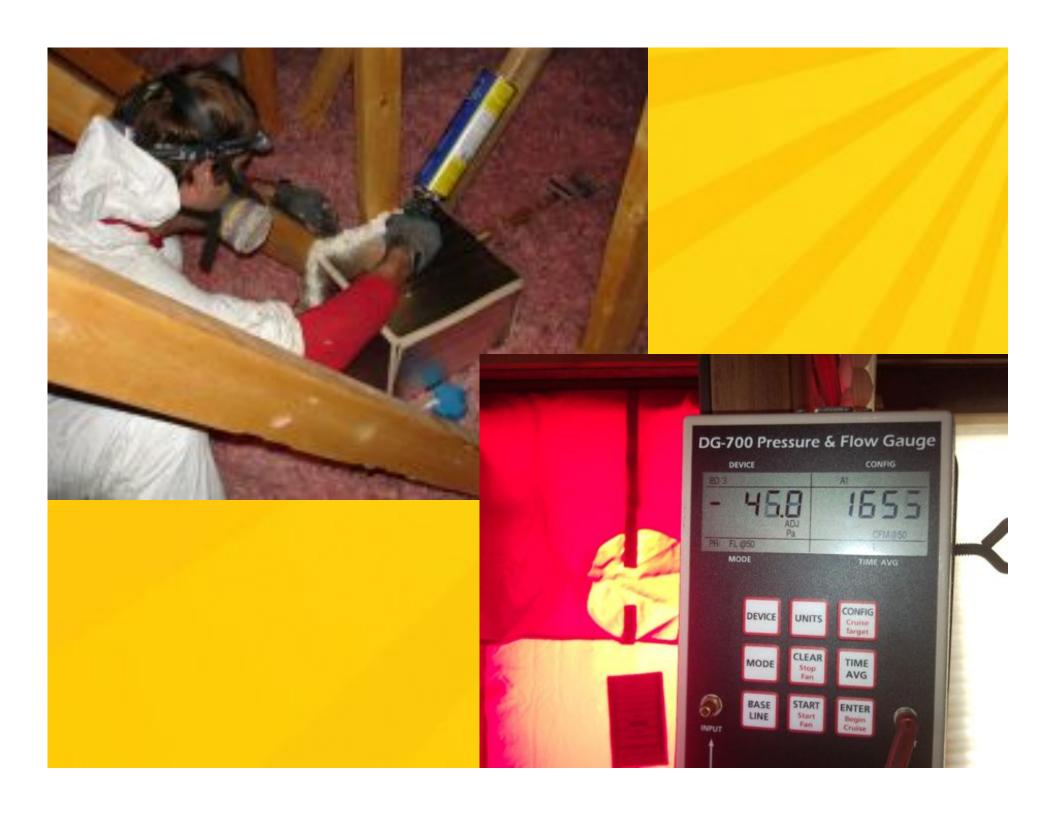












#### Insulation





















### Duct Leakage

- Return leaks suck!
  - Back drafting
  - Depressurization = air leakage
  - -IAQ
  - Equipment longevity
- Supply leaks blow!
  - Pressurization = air leakage
  - \$ out the leak
  - Comfort issues









#### HVAC - Ventilation

- "Build tight, ventilate right"
- Homes don't need to breathe, people do!
- Source Control
- − Air Change Hour (<.35 .25)</li>
- ASHRAE 62.2







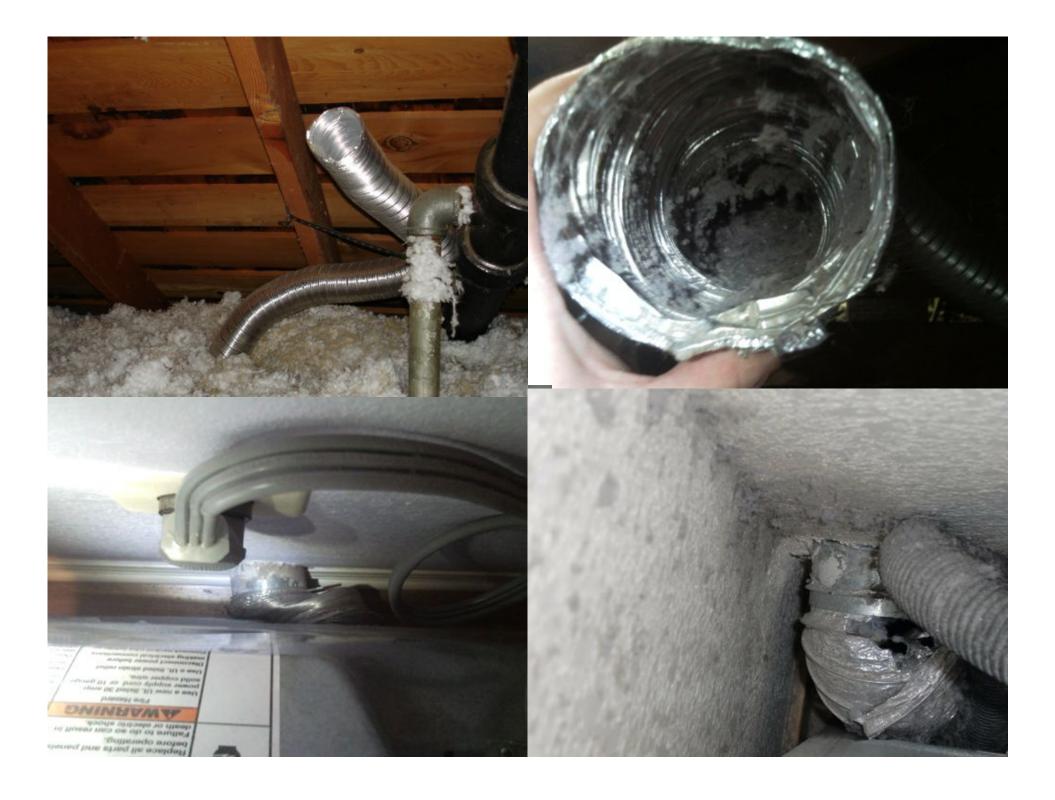




Heating Equipment





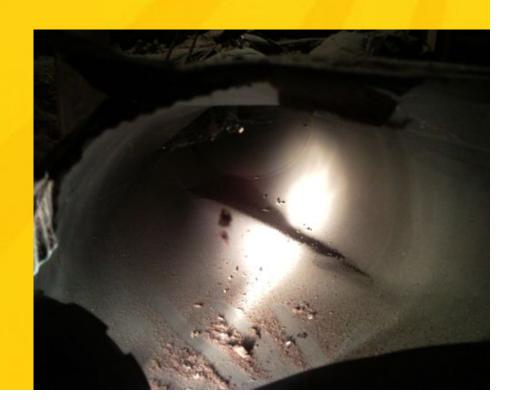




### Asbestos

- What is it?
- Where is it?
- What do you do?

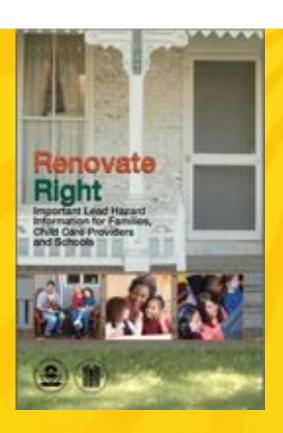






#### Lead Paint









#### Thank You!

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