



Air Barrier Continuity Is As Easy As Making Pizza!



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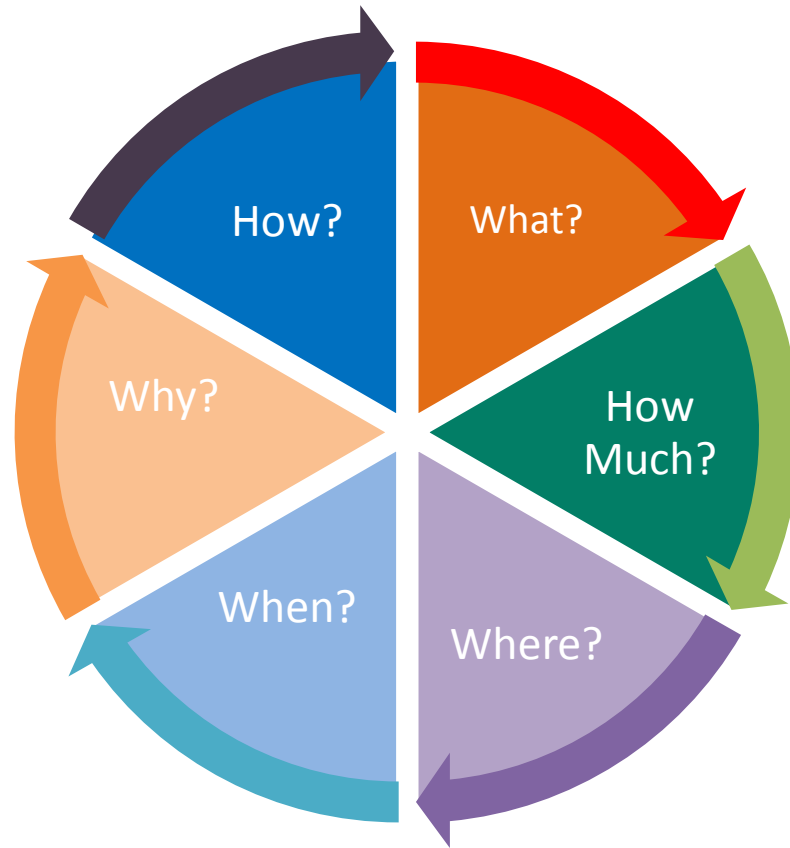
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Learning Objectives

- Take away at least one *Ah Ha!* that you can use.
- Connect the dots between Air Leakage, the Facility Assets and Revenue.
- Get you to think about how you can apply this solution.



OK...Let's Make Some Pizza?



But First...A Trivia Question



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Air Leakage

How Much Do You Think 1 cfm of Air Leakage Costs a Facility in NE Ohio in \$/sf?



Every 1 CFM of Air Costs???

- A. \$1
- B. \$5
- C. \$10
- D. \$20

■ Alex...What is \$5!



What is Air Barrier Continuity?



Air Barrier Continuity

Is NOT TYVEK!



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Air Barrier Continuity

Introduction to air barrier continuity

- Continuity is the most important characteristic of the air barrier system
- Allows the proper control of air movement into and out of building enclosures
- All six sides of a building enclosure must be continuous within themselves and in conjunction with each other



How Much Can We Save???



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Savings Can Be Significant!



\$0.10/sf



< 5 year
payback



Air Barrier Continuity

Failure of air barrier systems

Effects of uncontrolled air leakage on energy consumption:

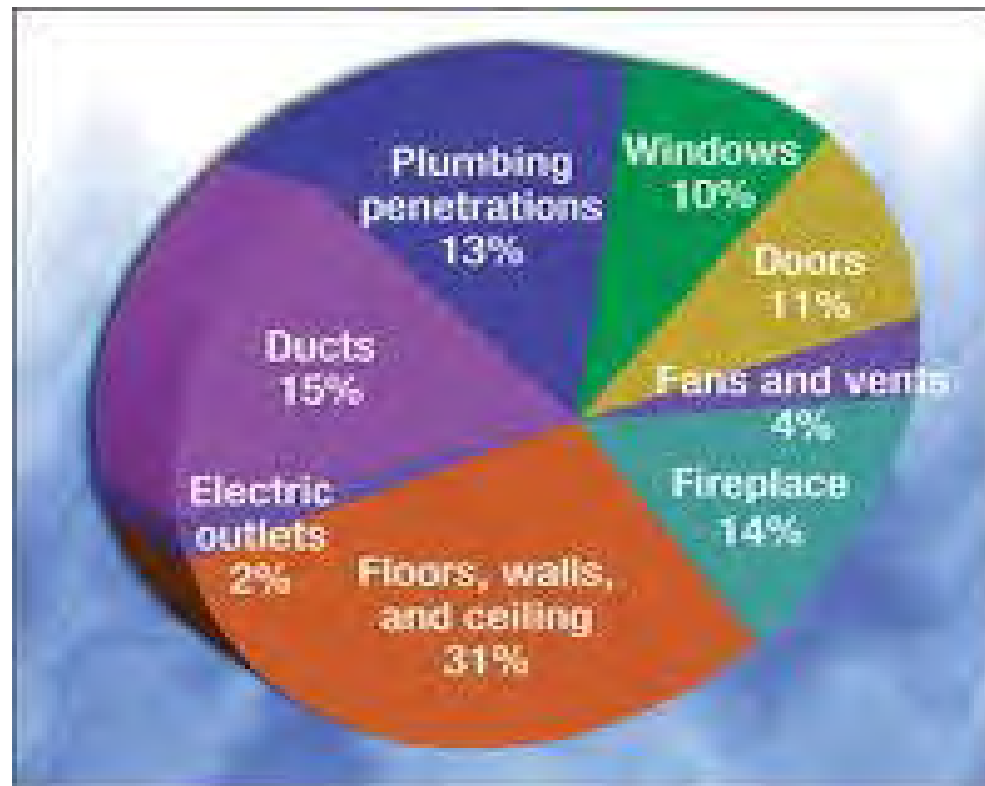
- High-rise multi-family – 40%
- High-rise commercial – 22-46%
- School building – 29%
- Supermarkets – 2 to 4 times more leaky than high-rise and school buildings
- Low-rise residential – 40%



Where Do Buildings Leak?



Buildings Leak Everywhere?



Next Trivia Question

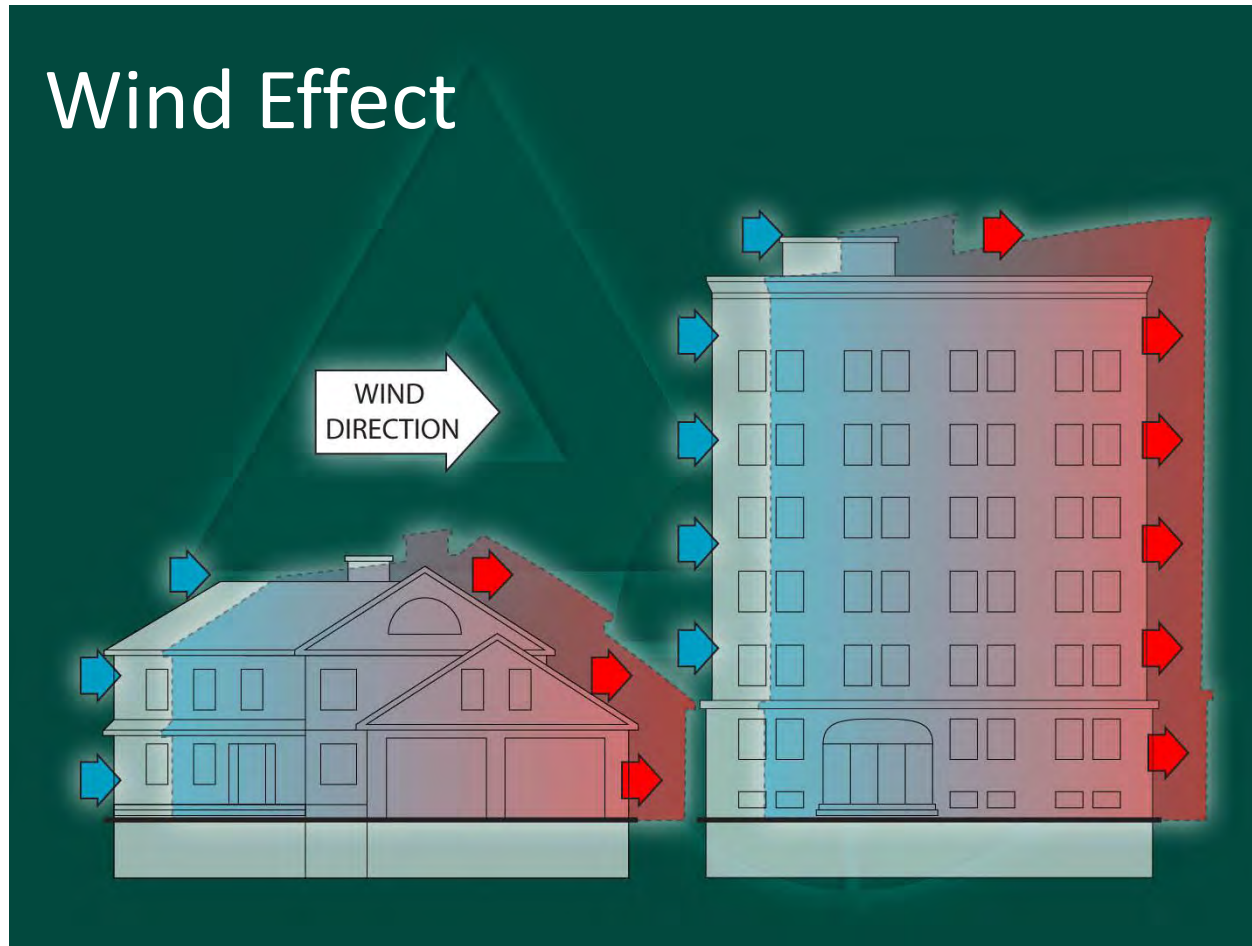


Name Three Things Impact Air Leakage?



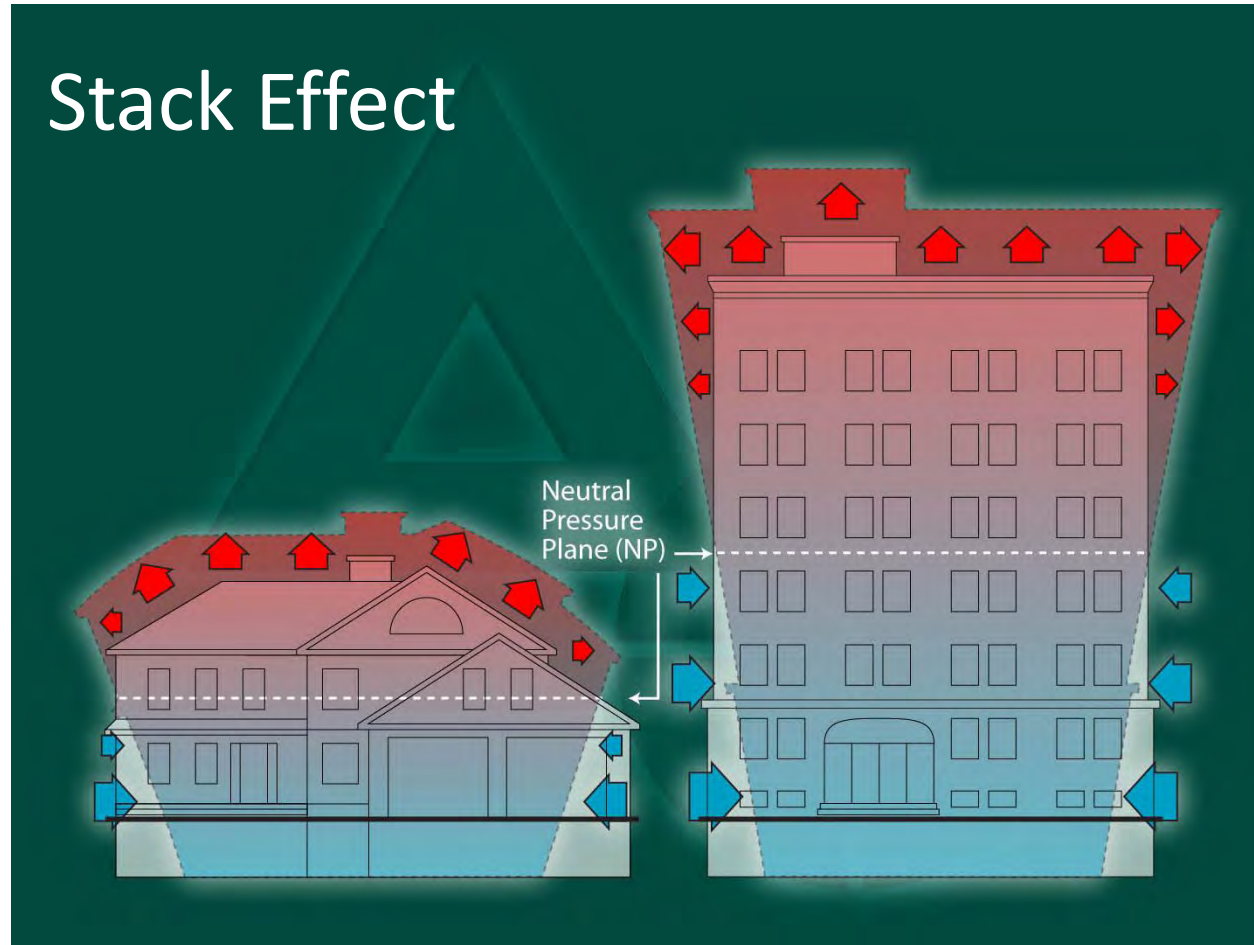
Air Barrier Continuity

Failure of air barrier systems



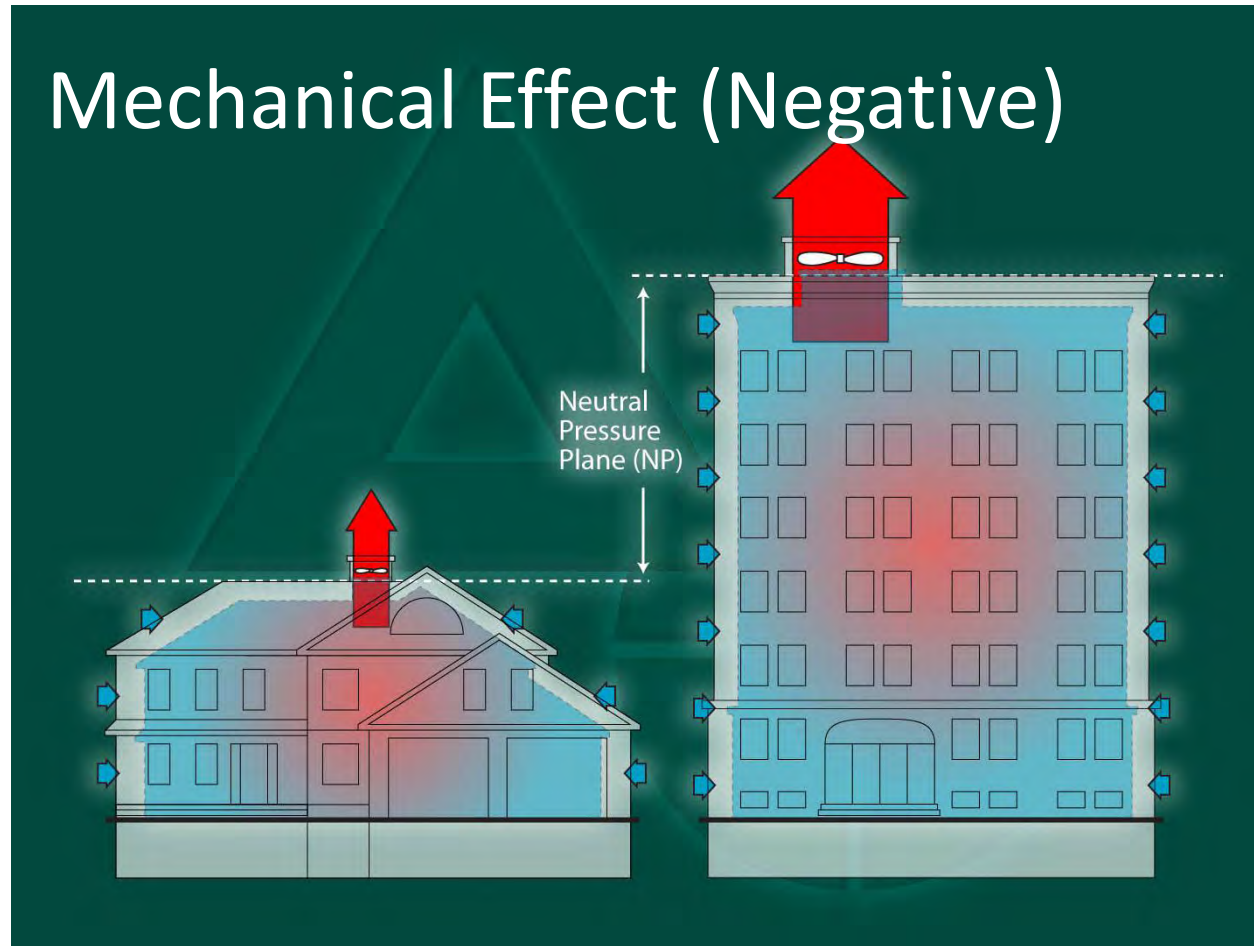
Air Barrier Continuity

Failure of air barrier systems



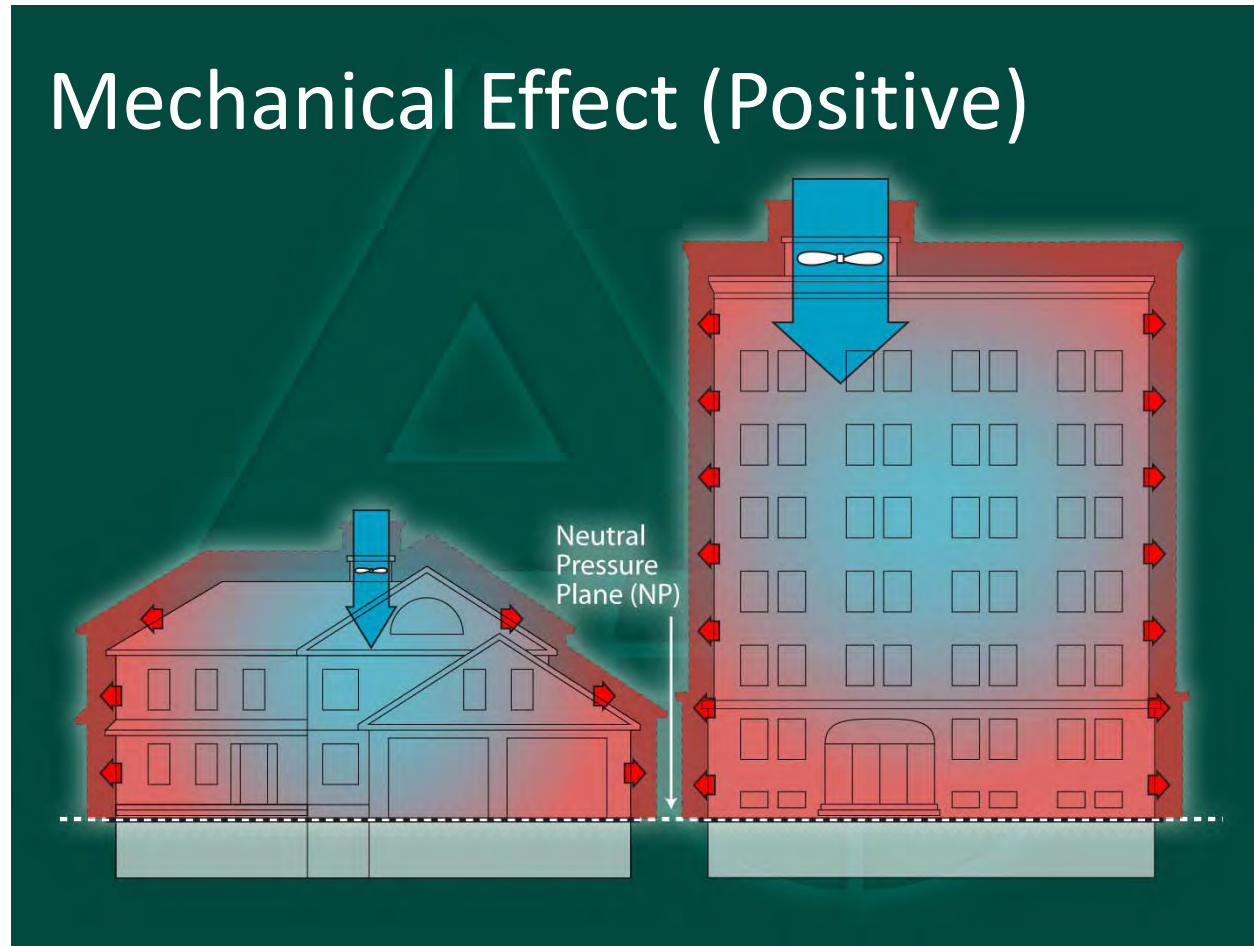
Air Barrier Continuity

Failure of air barrier systems



Air Barrier Continuity

Failure of air barrier systems



When Do Buildings Leak?



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Why Should We Fix Air Leaks??



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Air Barrier Continuity

Failure of air barrier systems

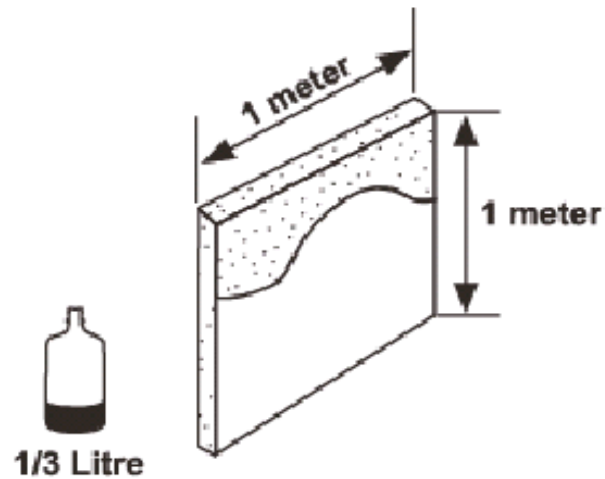
- Failure of air barrier systems and their continuity will make buildings:
 - Less healthy
 - Unsafe
 - Less durable
 - Uncomfortable
 - Energy inefficient



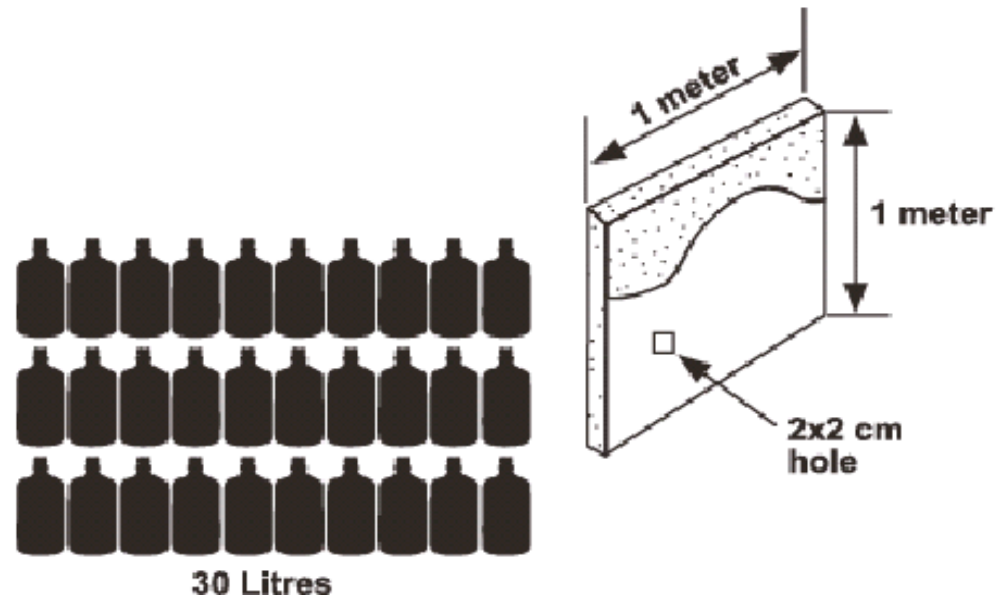


Air Leakage & Moisture

Transport via **DIFFUSION**
over 1m²



Transport via **AIR LEAKAGE**
Through 4 cm²



Air Barrier Continuity

Failure of air barrier systems

Effects of uncontrolled air leakage on energy consumption:

2004 NIST Study Conclusion:

- Continuous Air Barrier Systems can:
 - Reduce air infiltration by more than 60%
 - Reduce energy consumption by up to 40%



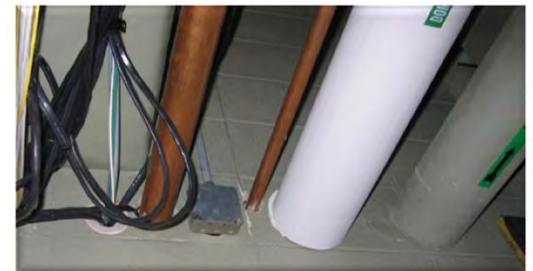
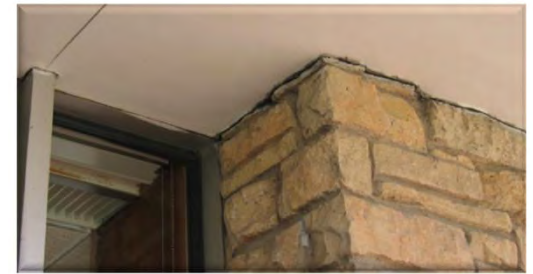
How Do I Check??



Air Barrier Continuity

Diagnosing the problems

- **Building Envelope Assessment**



Air Barrier Continuity

Diagnosing the problems

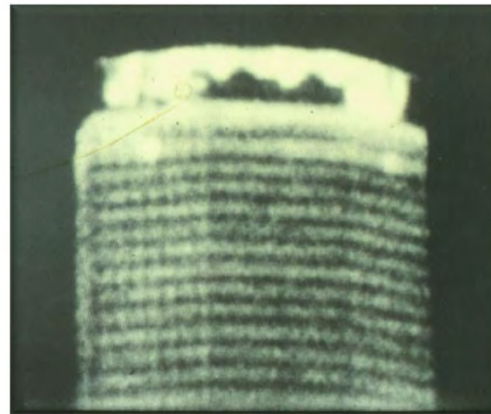
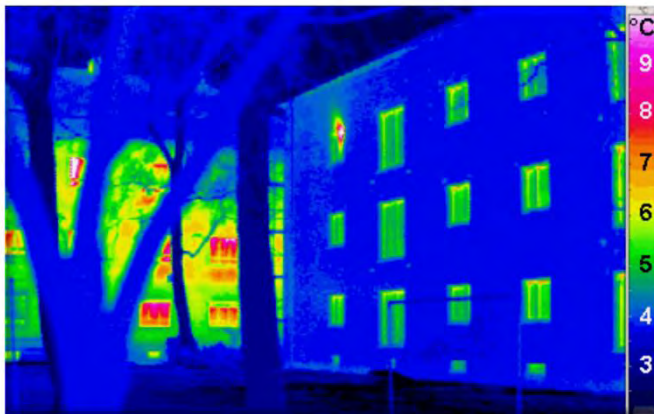
- Locating air leakage paths



Air Barrier Continuity

Diagnosing the problems

- Infrared thermography



Air Barrier Continuity

Diagnosing the problems

- Blower Door Test



How Do I Implement??

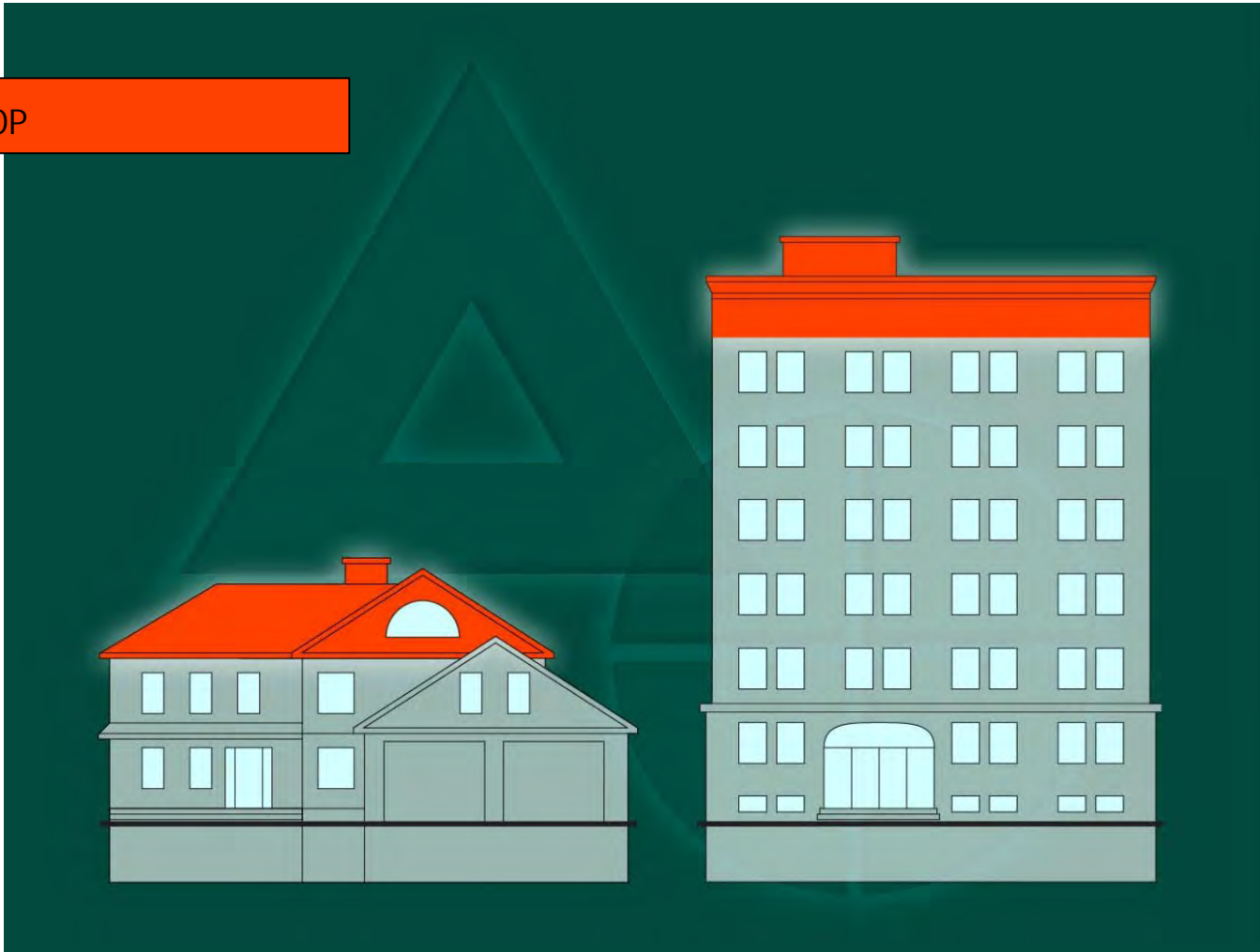


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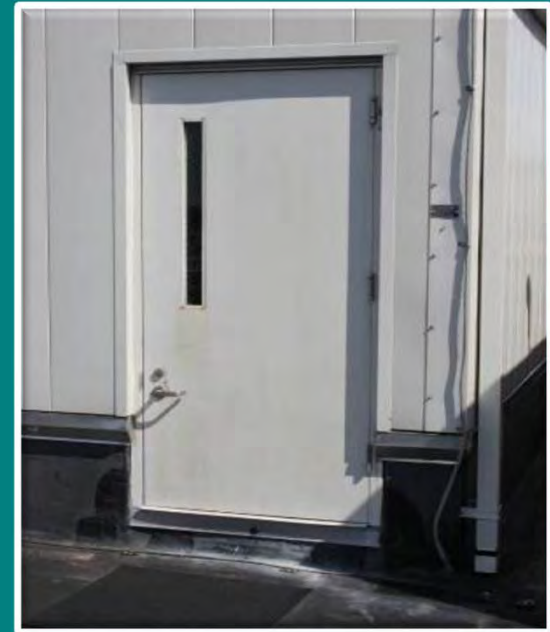
Air Barrier Continuity

i. TOP



Air Barrier Continuity

Seal top of building



Air Barrier Continuity

Seal top of building



Air Barrier Continuity

Seal top of building



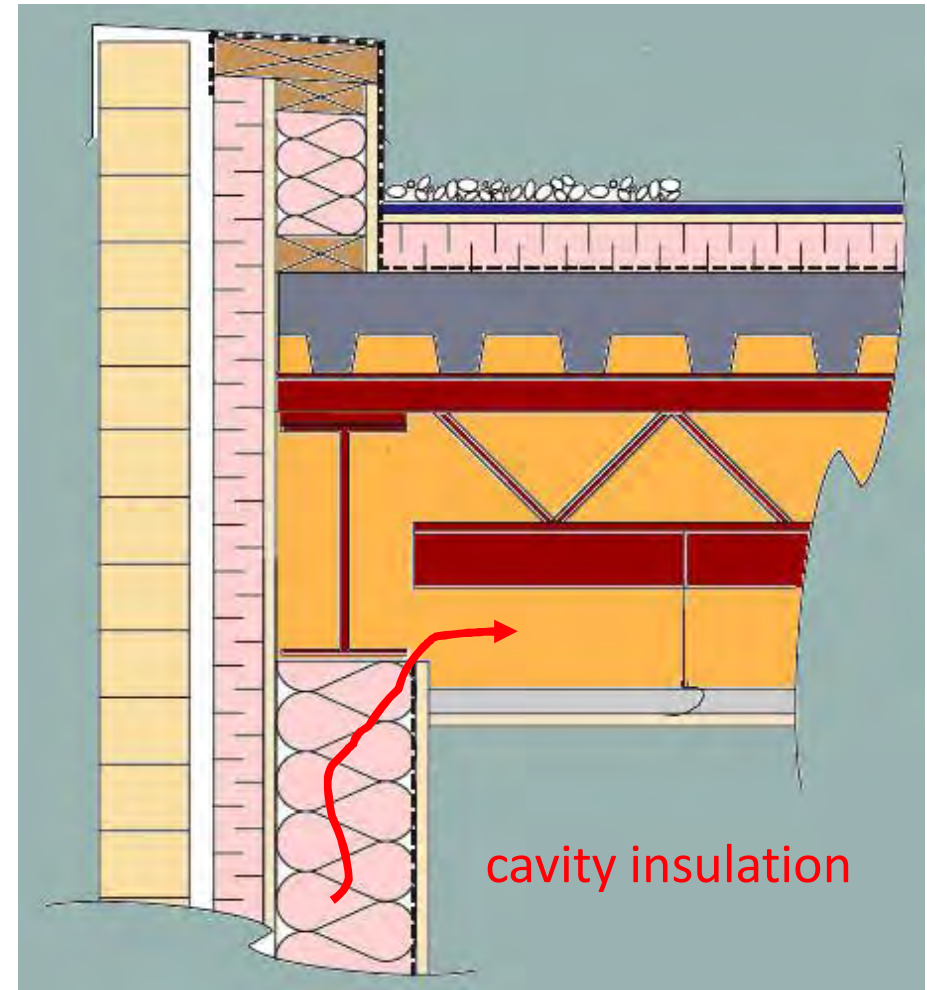
Air Barrier Continuity

Seal top of building



Air Barrier Continuity

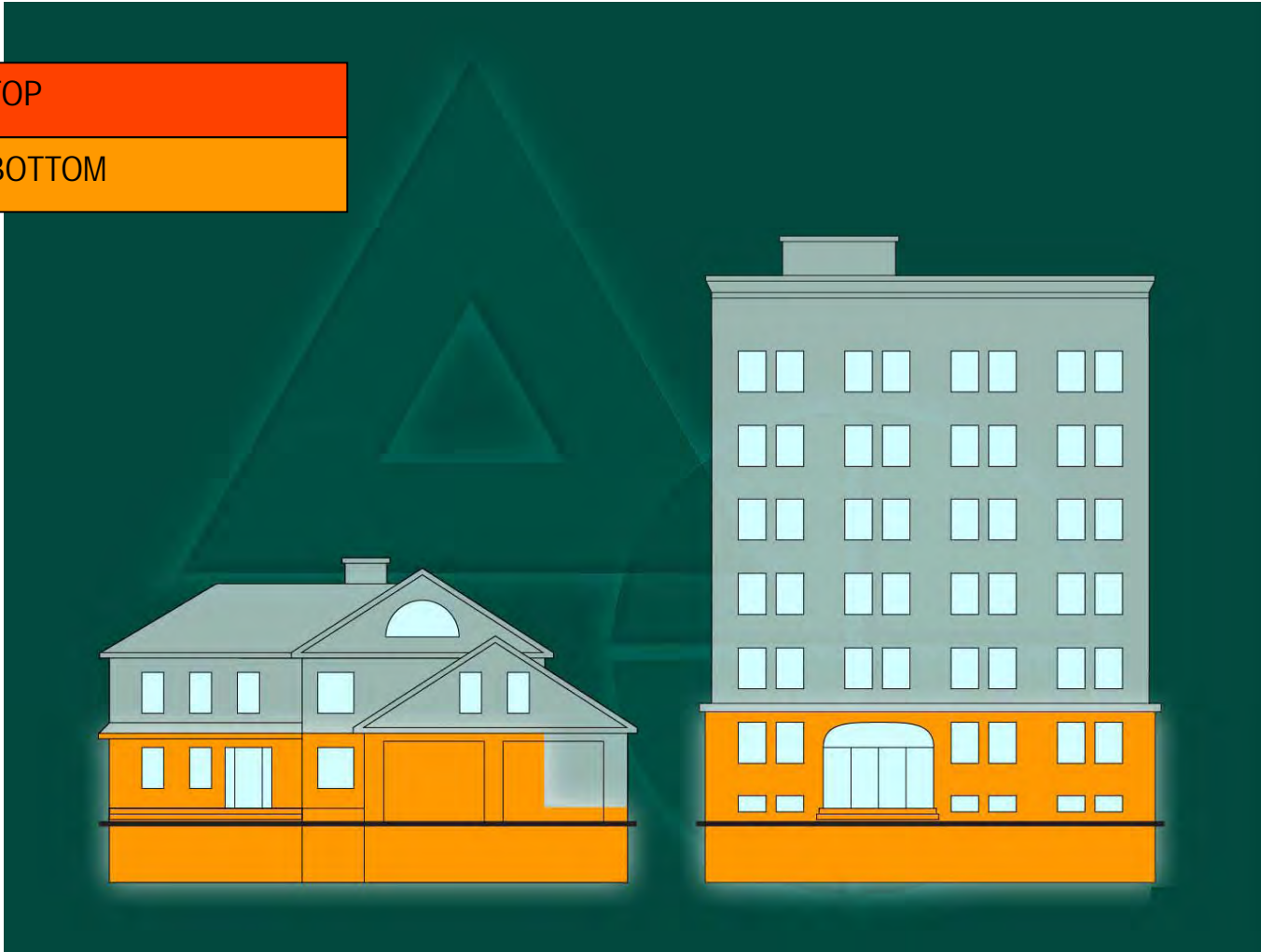
- **The plenum**
 - Air can be extracted through many different assemblies if air barrier systems are not in place



Air Barrier Continuity

i. TOP

ii. BOTTOM



Air Barrier Continuity

Seal bottom of building



Air Barrier Continuity

Seal bottom of building



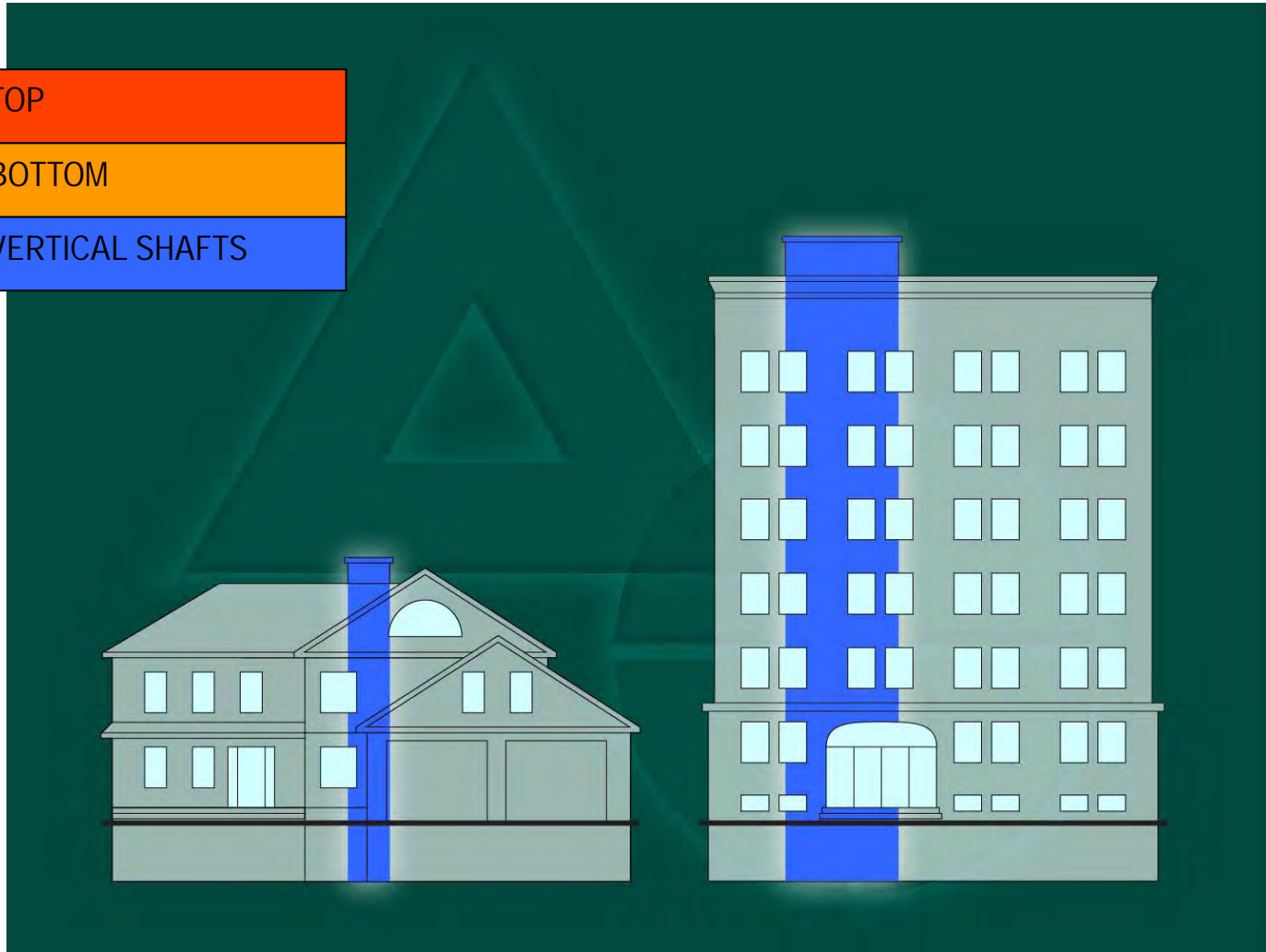
Air Barrier Continuity

Seal bottom of building



Air Barrier Continuity

- i. TOP
- ii. BOTTOM
- iii. VERTICAL SHAFTS



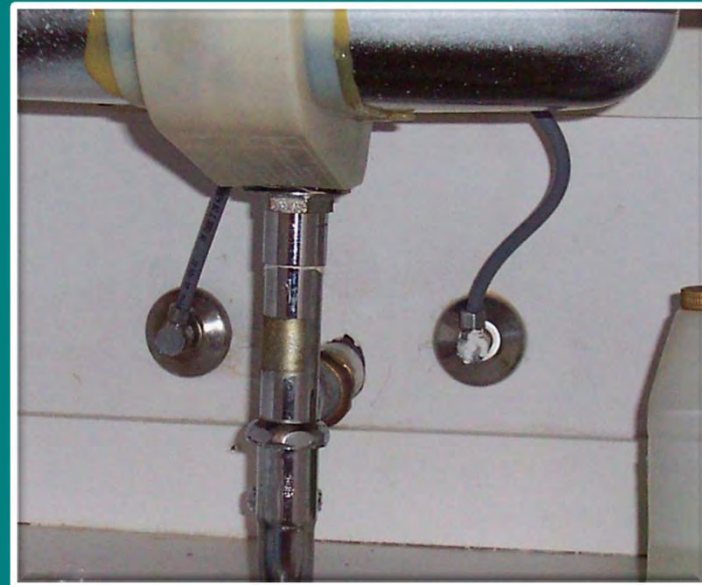
Air Barrier Continuity

Seal vertical shafts



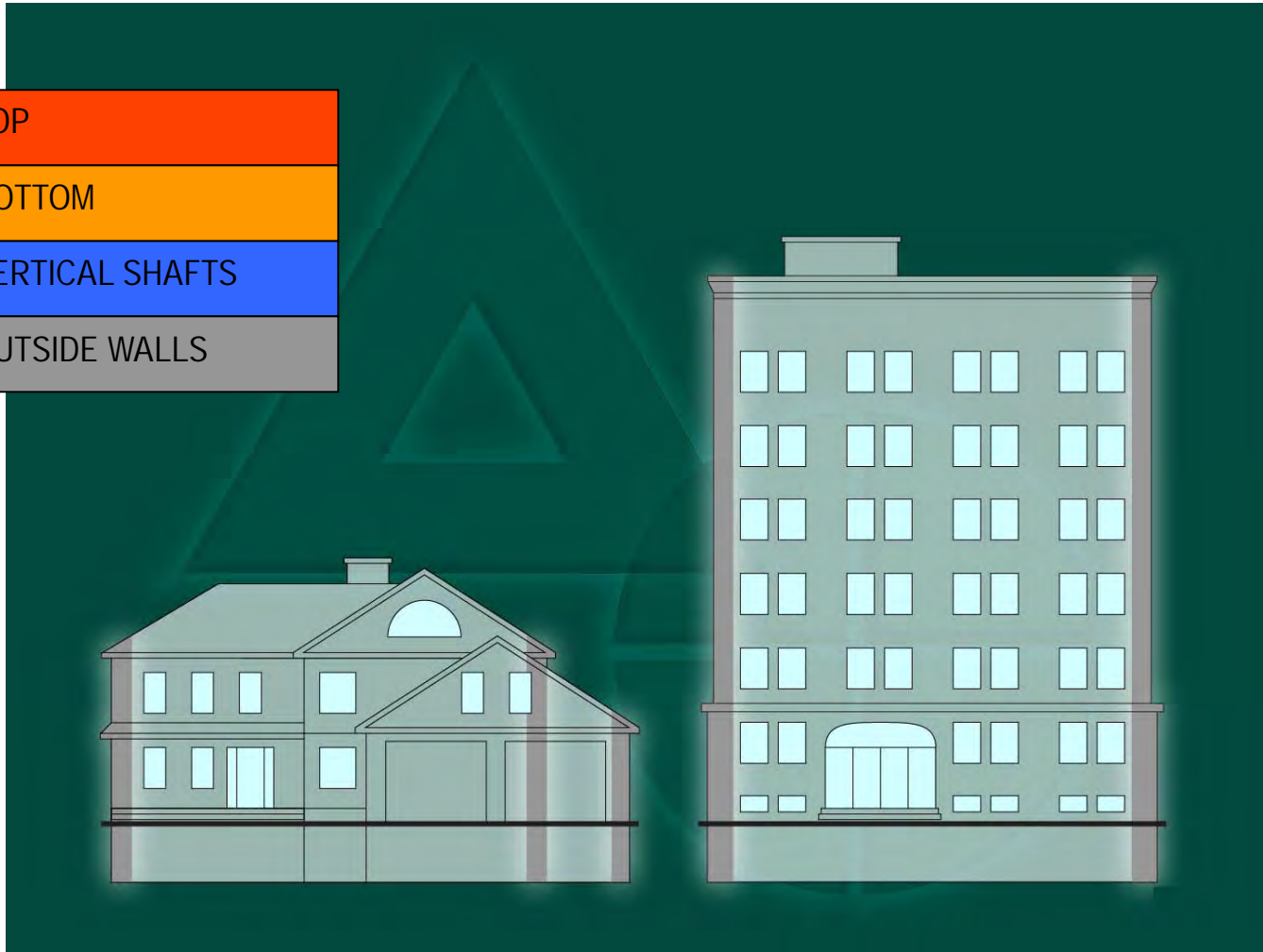
Air Barrier Continuity

Seal vertical shafts



Air Barrier Continuity

- i. TOP
- ii. BOTTOM
- iii. VERTICAL SHAFTS
- iv. OUTSIDE WALLS



Air Barrier Continuity

Seal outside walls and openings



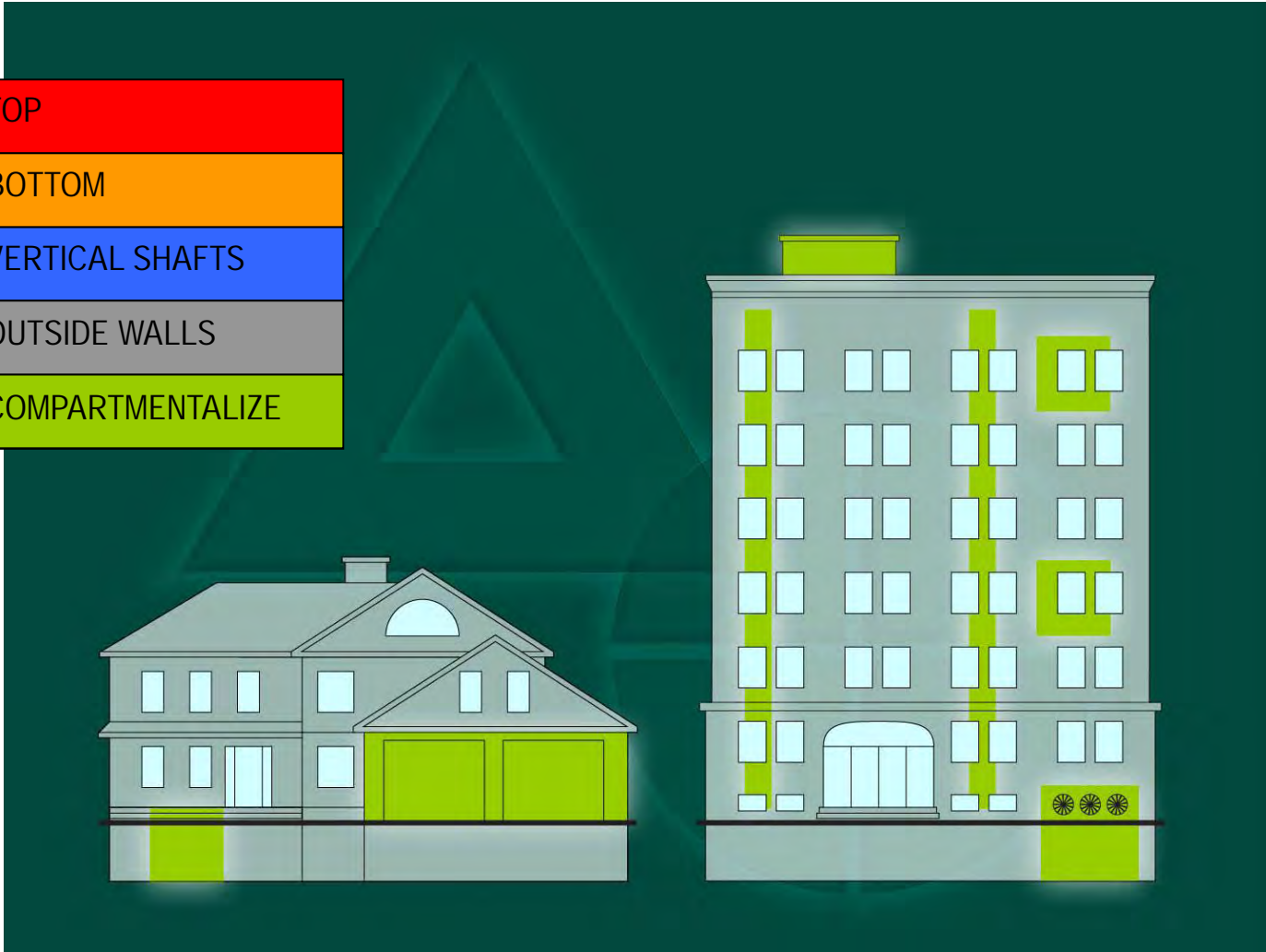
Air Barrier Continuity

Seal outside walls and openings



Air Barrier Continuity

- i. TOP
- ii. BOTTOM
- iii. VERTICAL SHAFTS
- iv. OUTSIDE WALLS
- v. COMPARTMENTALIZE



Air Barrier Continuity

Compartmentalize



Air Barrier Continuity

Compartmentalize

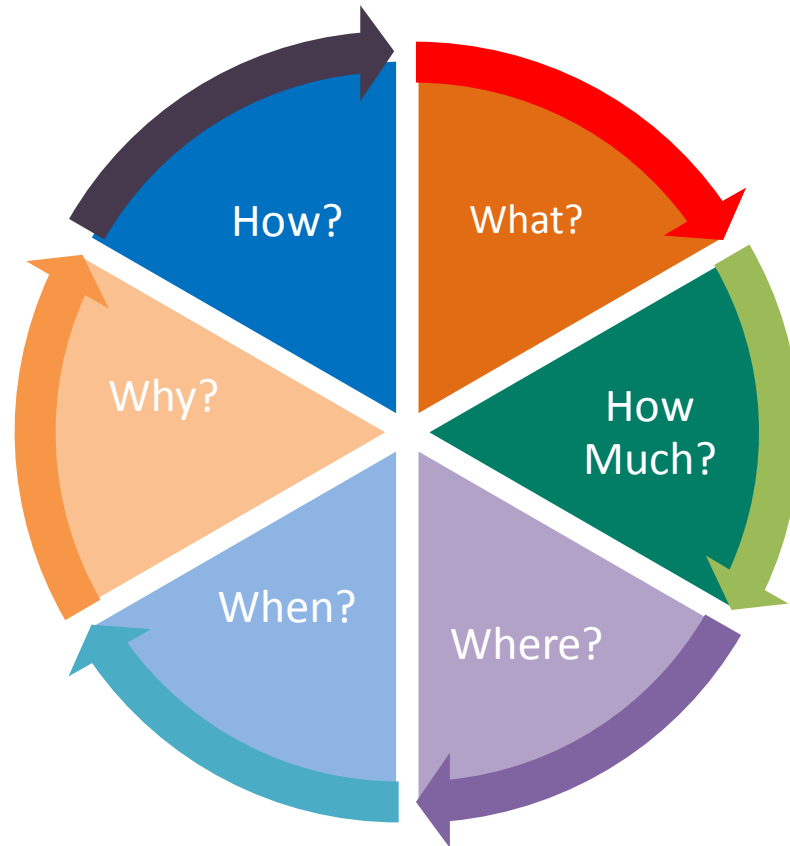


Air Barrier Continuity

- *Seal The Building First...*
- *Improving environmental quality*
- *Increase building durability*
- *Improve comfort*
- *Reduce moisture*
- *Reduce energy costs*



Let's Eat!



Tremco/Canam

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