



# Air Sealing Solutions for Attached Homes

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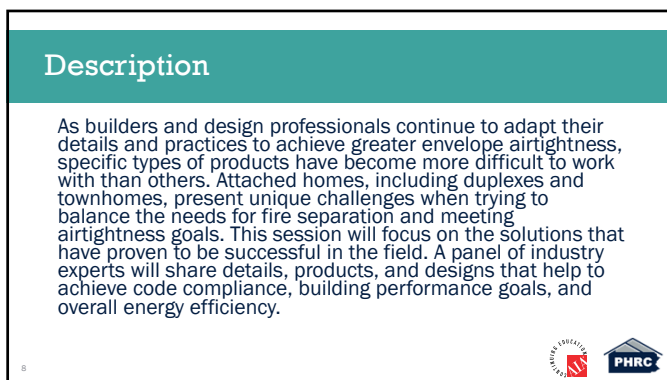
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## Description

As builders and design professionals continue to adapt their details and practices to achieve greater envelope airtightness, specific types of products have become more difficult to work with than others. Attached homes, including duplexes and townhomes, present unique challenges when trying to balance the needs for fire separation and meeting airtightness goals. This session will focus on the solutions that have proven to be successful in the field. A panel of industry experts will share details, products, and designs that help to achieve code compliance, building performance goals, and overall energy efficiency.

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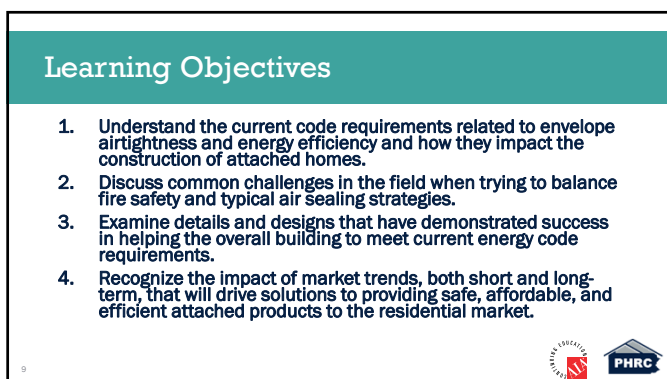
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## Learning Objectives

1. Understand the current code requirements related to envelope airtightness and energy efficiency and how they impact the construction of attached homes.
2. Discuss common challenges in the field when trying to balance fire safety and typical air sealing strategies.
3. Examine details and designs that have demonstrated success in helping the overall building to meet current energy code requirements.
4. Recognize the impact of market trends, both short and long-term, that will drive solutions to providing safe, affordable, and efficient attached products to the residential market.

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## AIR SEALING THE BUILDING ENVELOPE

COMMON ISSUES  
TO ADDRESS TO  
REACH 3ACH

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## CONTENTS

- Focus on Multi Family and Slab homes
- Most common areas of failures and fixes
- Discussion

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## MULTI FAMILY AND SLAB HOMES



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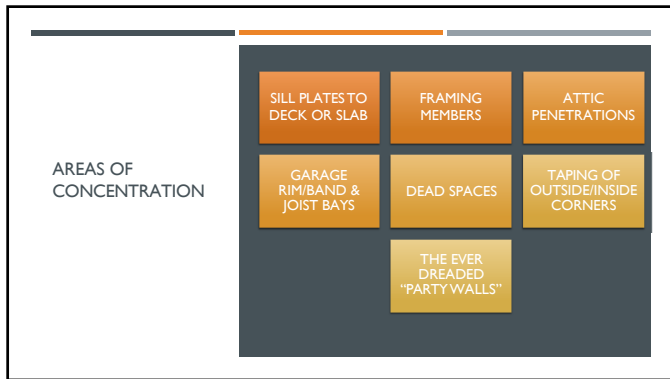
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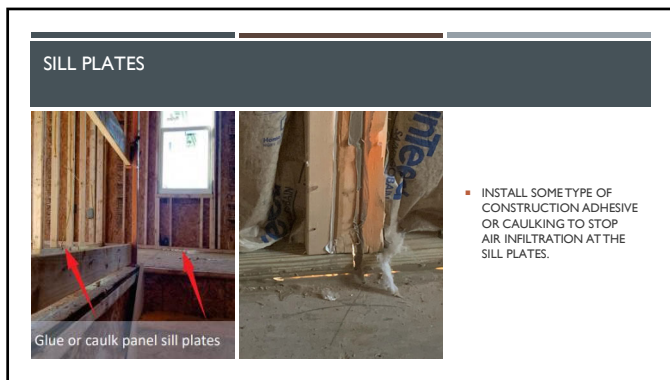
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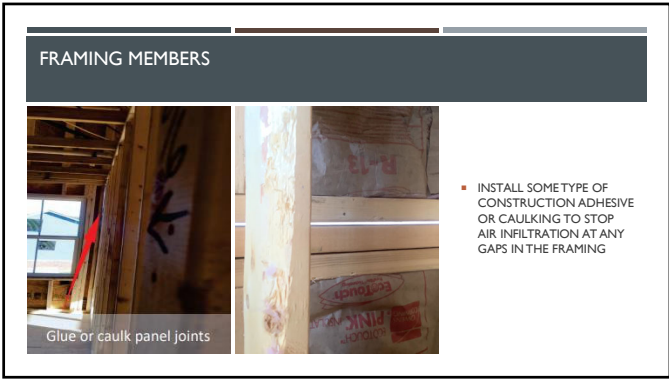
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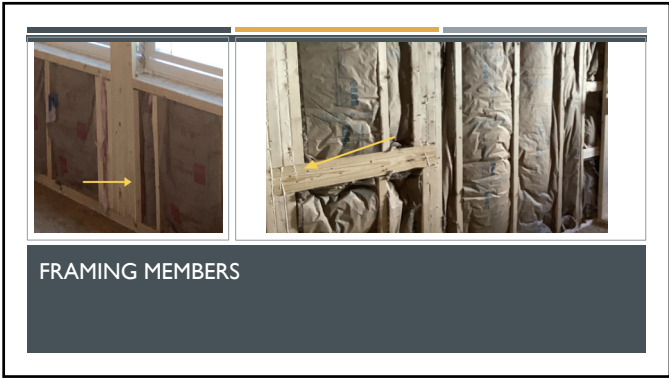
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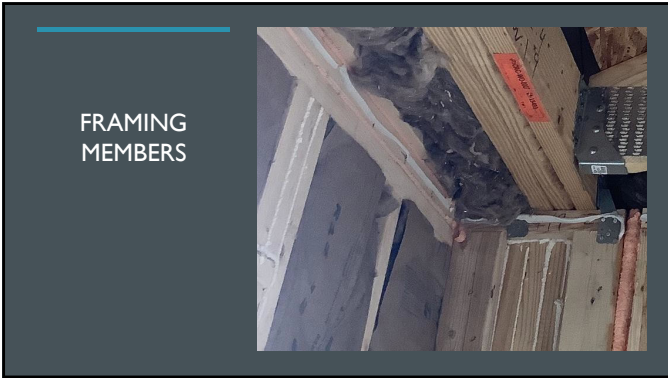
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ATTIC  
PENETRATIONS



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ATTIC  
PENETRATIONS  
DRYWALL SEAL  
GASKET



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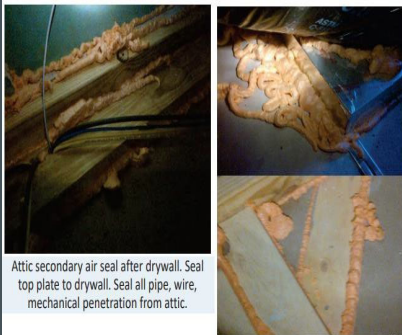
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ATTIC  
PENETRATIONS  
SECONDARY  
AIR SEAL



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**GARAGE RIM/BAND**



- BLOCK AND SEAL THE RIM/BAND AND ANY PENETRATIONS WITH SOLID MATERIAL AND FOAM

Foam seal garage band and all penetrations.

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**GARAGE RIM/BAND**



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**DEAD SPACES**



- INSTALL A FULLY ALIGNED AIR BARRIER IN THE DEAD SPACES

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DEAD SPACES

- "A+" FOR THE THOUGHT
- "F" FOR THE EXECUTION



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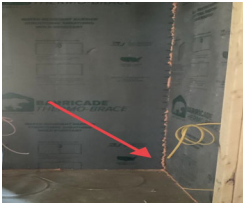
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DEAD SPACES





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TAPING OF INSIDE AND OUTSIDE CORNERS  
CORNER TAPE SHOULD BE APPLIED TO CREATE A 90 DEGREE INSIDE OR OUTSIDE CORNER



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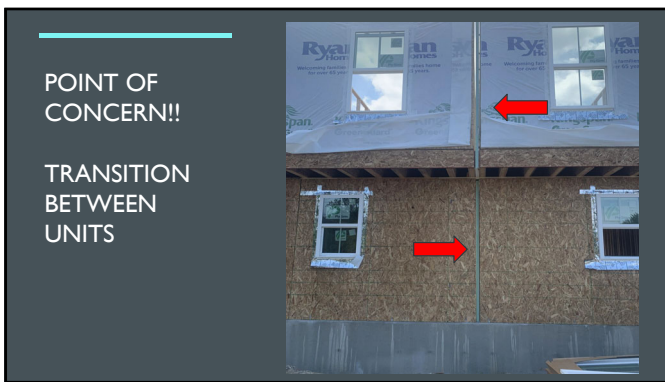
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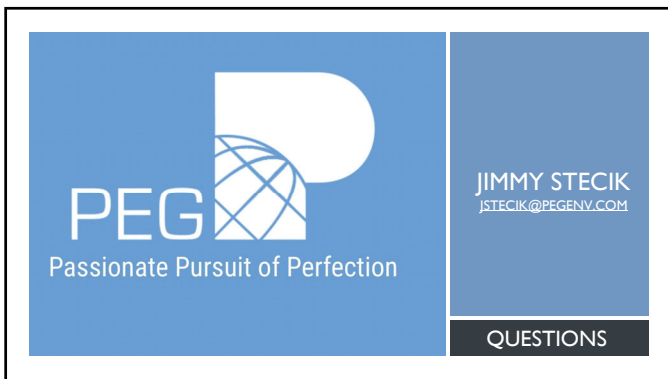
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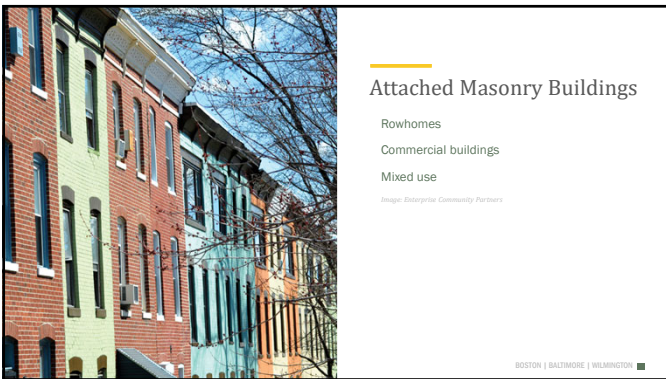
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Attached Masonry Buildings

- Rowhomes
- Commercial buildings
- Mixed use

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Common Challenges

- Irregular Surfaces

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Common Challenges

- Irregular Surfaces
- Penetrations and Transitions

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Common Challenges

- Irregular Surfaces
- Penetrations and Transitions
- Shared Infrastructure

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Common Challenges

- Irregular Surfaces
- Penetrations and Transitions
- Shared Infrastructure
- Historic Preservation

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Common Challenges

- Irregular Surfaces
- Penetrations and Transitions
- Shared Infrastructure
- Historic Preservation
- Age and Condition

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### Planning and Communication

- Know where the air barrier is
- Know what the air barrier is
- Communicate

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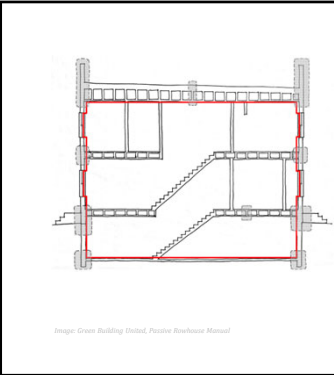
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### Planning and Communication

- The air barrier must be continuous
- The Red Line test

Image: Green Building United, Positive Airhouse Manual

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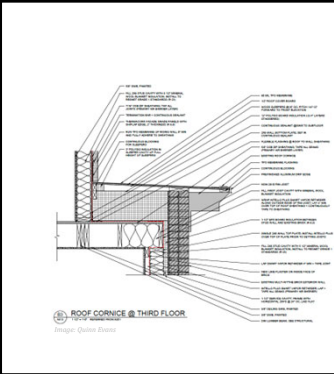
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### Planning and Communication

- The air barrier must be continuous
- The Red Line test
- Identify the control layers on the construction documents

**ROOF CORNER @ THIRD FLOOR**  
Image: Quinn Evans

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Planning and Communication

- The air barrier must be continuous
- The Red Line test
- Identify the control layers on the construction documents
- Designate an "Air Boss"

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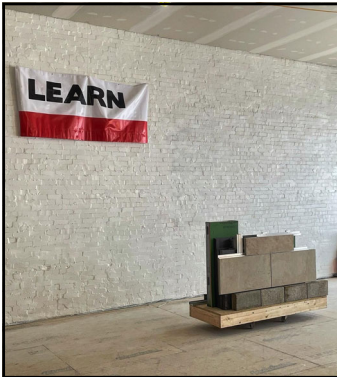
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In Practice

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In Practice: Walls

- Start clean, prep is key

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In Practice: Walls

- Kane, PA
- 3 Stories, 12,000 ft<sup>2</sup>, mixed-use commercial
- Interior air barrier with exterior insulation
- No historic preservation concerns
- Exposed, painted brick finish inside

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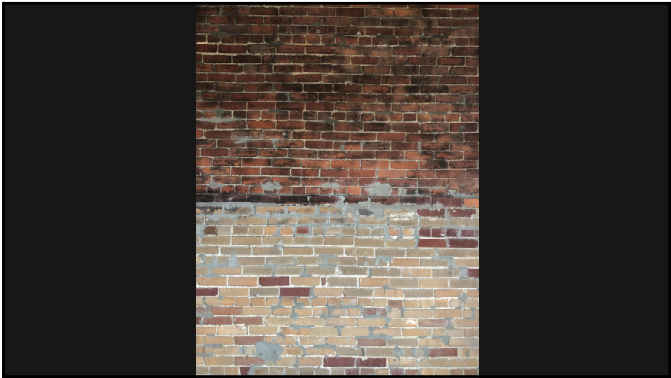
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In Practice: Walls

- Wilmington, DE
- 2 stories, 1,900 ft<sup>2</sup>, single-family residential
- Interior air barrier with interior insulation
- Located in a historic district
- Framed interior, with GWB finish.

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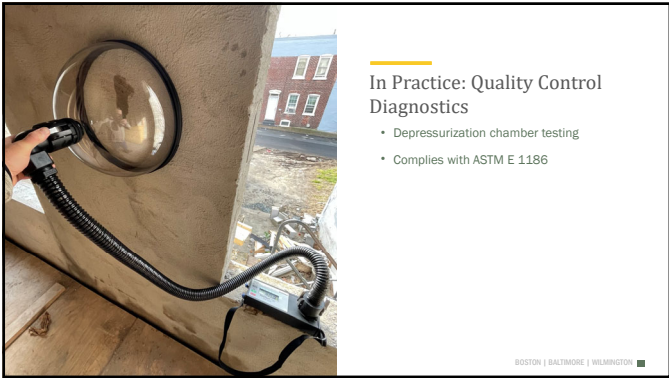
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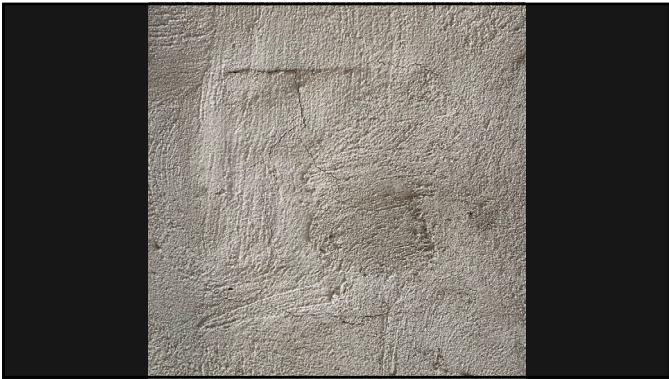
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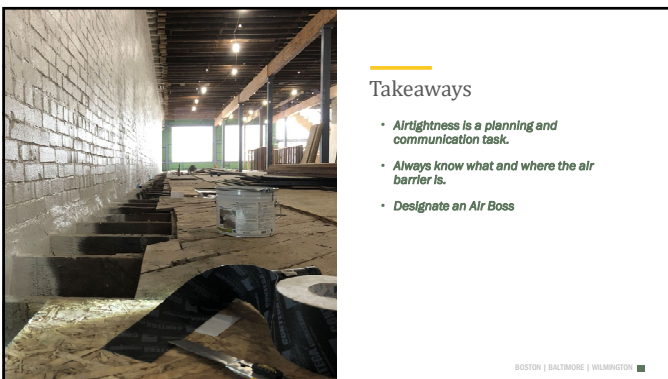
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### Takeaways

- *Airtightness is a planning and communication task.*
- *Always know what and where the air barrier is.*
- *Designate an Air Boss*

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Construction Project Manager  
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