

MID-STAGE BLOWER DOOR TESTING: Case Studies

April, 2021

Mid-Stage Blower Door Test

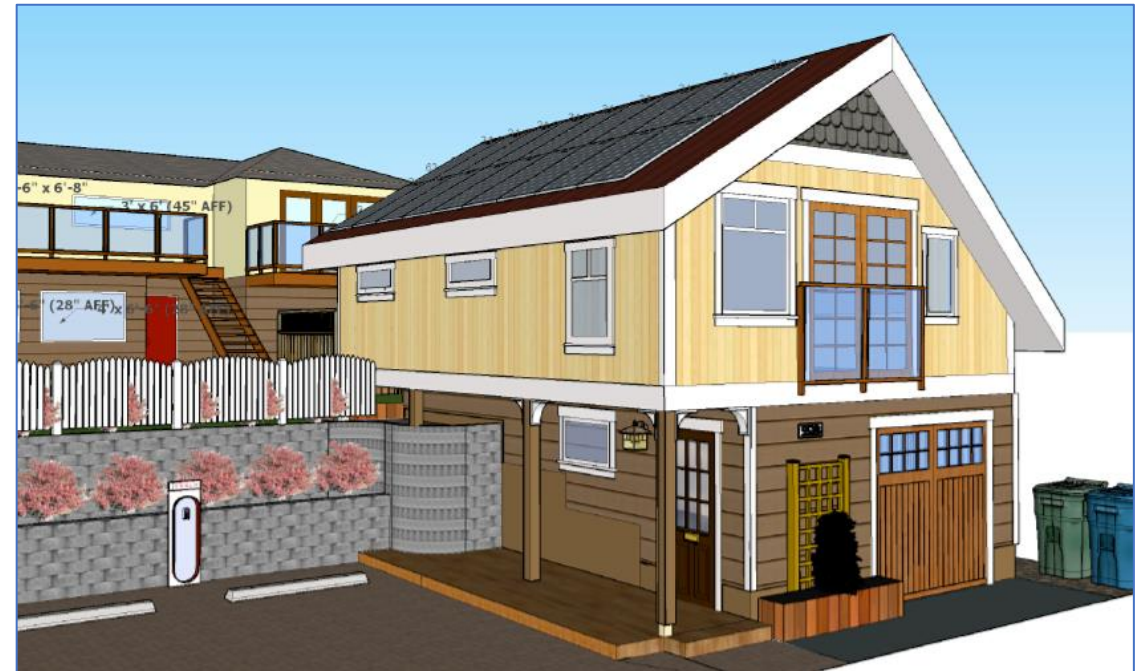
Case 1- Amess Street

Laneway House

- Step Code Level: 3
- Air Barrier: Sealed Polyethylene (Interior)

ACH₅₀ Score

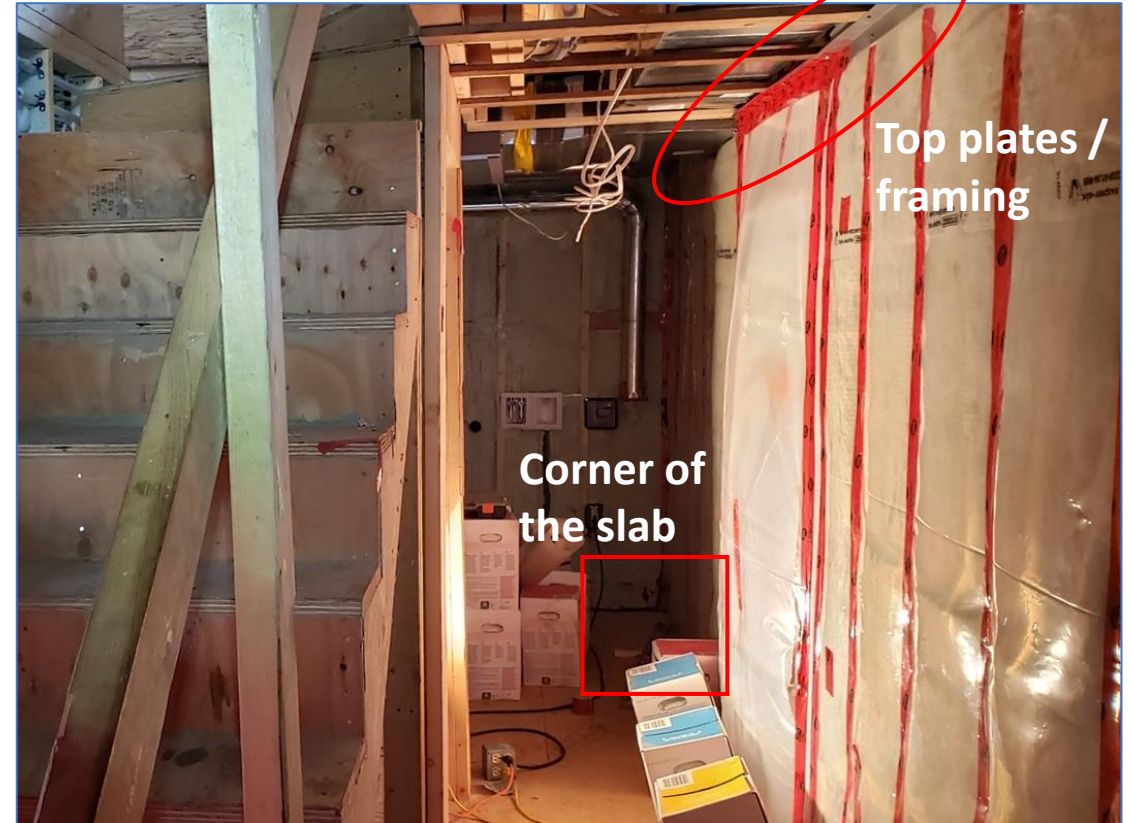
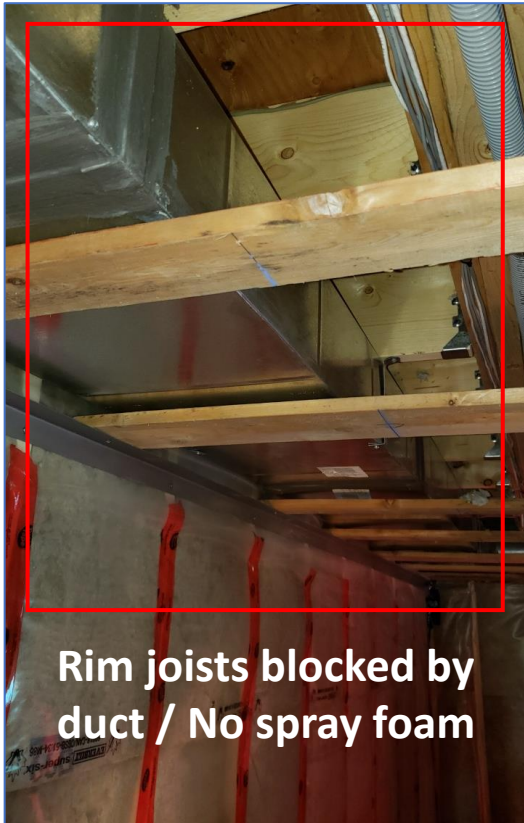
- Required for Step 3: Maximum 2.5 ACH
- Mid Stage Airtightness: **6.5 ACH**



Mid-Stage Blower Door Test

Case 1- Amess Street

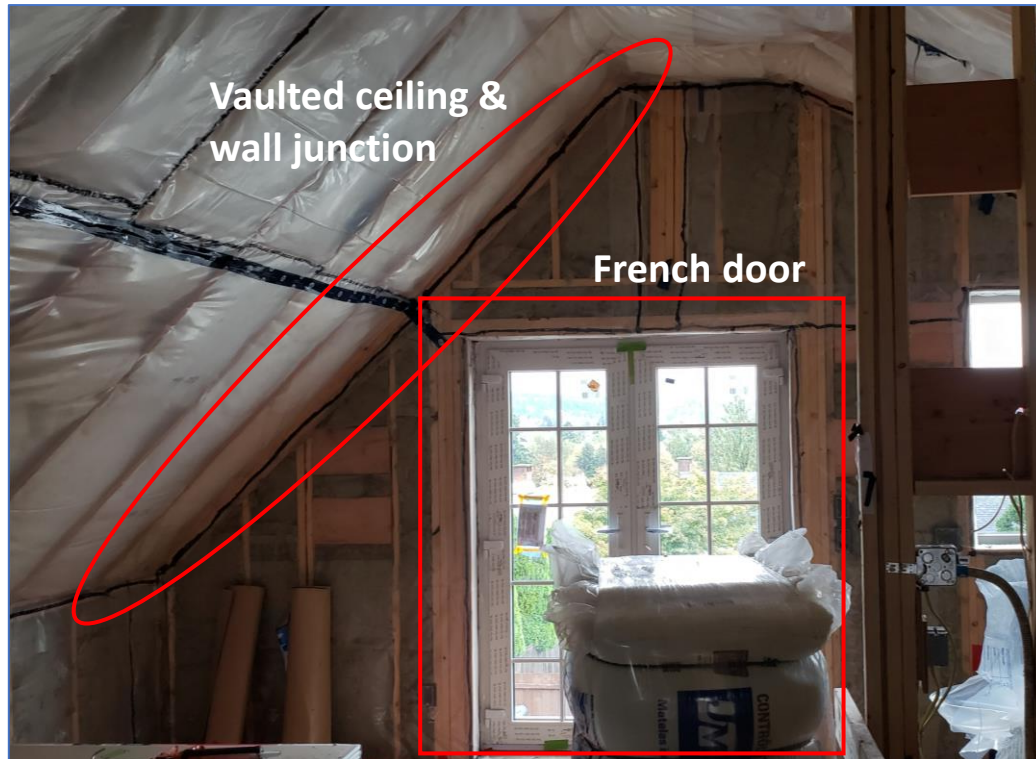
- Air Leakage Points Identified



Mid-Stage Blower Door Test

Case 1- Amess Street

- Air Leakage Points Identified



Blower Door Test at Completion

Case 1- Amess Street



Air Barrier Strategy

- Interior - Sealed Polyethylene
- Exterior - Tyvek

ACH₅₀ Score

- Required for Step 3: Maximum 2.5 ACH
- Mid-Stage Airtightness: **6.5 ACH**
- Airtightness at Completion: **2.2 ACH**
- ✓ Energy Code Step 3 Requirements Met

Mid-Stage Blower Door Test

Case 2- Garrett Street

Single Detached House

- Step Code Level: 5
- Air Barrier: Sealed Membrane (Exterior)

ACH₅₀ Score

- Required for Step 5: Maximum 1.0 ACH
- Mid-Stage Airtightness @ Attempt #1 : **1.65 ACH**

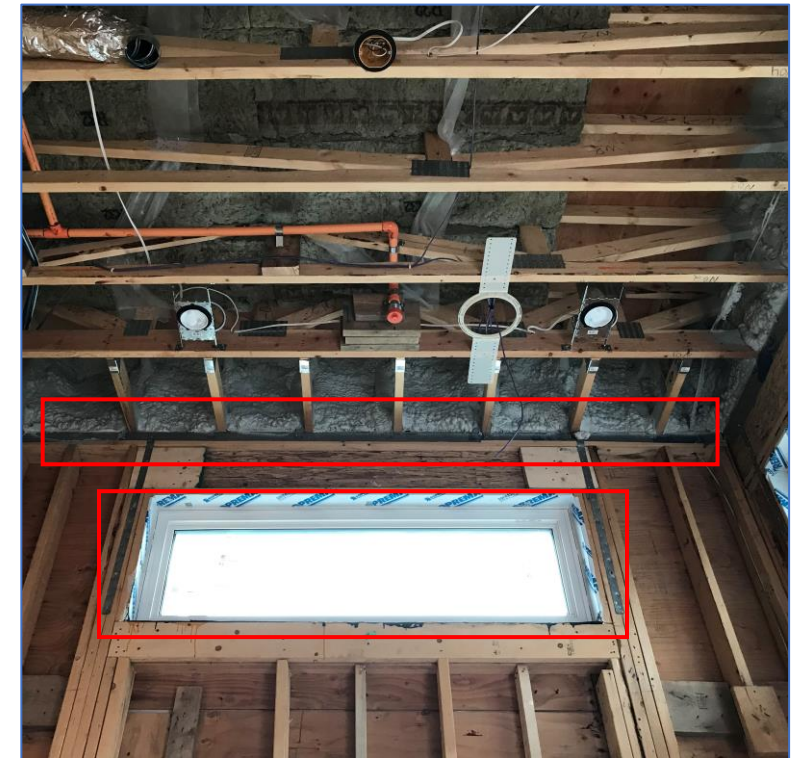


Mid-Stage Blower Door Test

Case 2- Garrett Street

- Air Leakage Points Identified (Typical)

- Corner junctions
- Flat ceiling
- Ceiling/wall junctions
- Rim joists
- Top & bottom plates
- Door head/jambs



Mid-Stage Blower Door Test

Case 2- Garrett Street



Air Barrier Strategy

- Exterior - Sealed Membrane (Fluid Applied Air Barrier Membrane Applied to Sheathing)
- Interior - None

ACH₅₀ Score

- Required for Step 5: Maximum 1.0 ACH
 - Mid-Stage Airtightness (Attempt #1): **1.65 ACH**
 - Mid-Stage Airtightness (Attempt #2): **0.84 ACH**
 - Mid-Stage Airtightness (Attempt #3): **0.59 ACH**
- ✓ Energy Code Step 5 Requirements Met

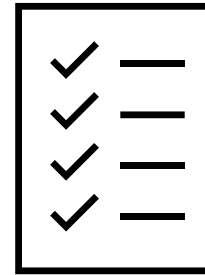
Lesson Learned

Key Elements for Successful Outcome



Motivated Builders

- Identify and remediate issues at mid-stage assessment.
- Access to entire building envelope (e.g. scaffolding) and equipped with subtrades and adequate building materials/tools for remedials .



Energy Advisor Services

- Willing to move beyond minimum building code compliance services and provide enhanced support services as technical consultant.
- Technical proficiency to identify issues and present solutions.
- Adequately compensated to incorporate enhanced scope.



Tool Enhancement

- Tool enhancements to support blower door use during mid-stage to better identify opportunities (e.g. smoke machine and thermal imaging camera)