Connecticut HES Air Sealing, Duct Sealing, and Insulation Practices (R151)

NMR was contracted by The Connecticut Energy Efficiency Board to identify energy savings opportunities for the CT Home Energy Solutions (HES) weatherization program. We conducted **eight primary research tasks**, including on-site reviews of the air sealing, duct sealing, and insulation practices of program vendors.

18K Data from Homes Weatherized through HES Program

2 Program Staff Interviews

23 HES Vendor Interviews

70 On-site Quality Inspections

70 Participant Interviews

10 On-site Inspections Along-side HES Vendors

5 Interviews with Administrators from Leading Programs

2 QA/QC Vendor Interviews

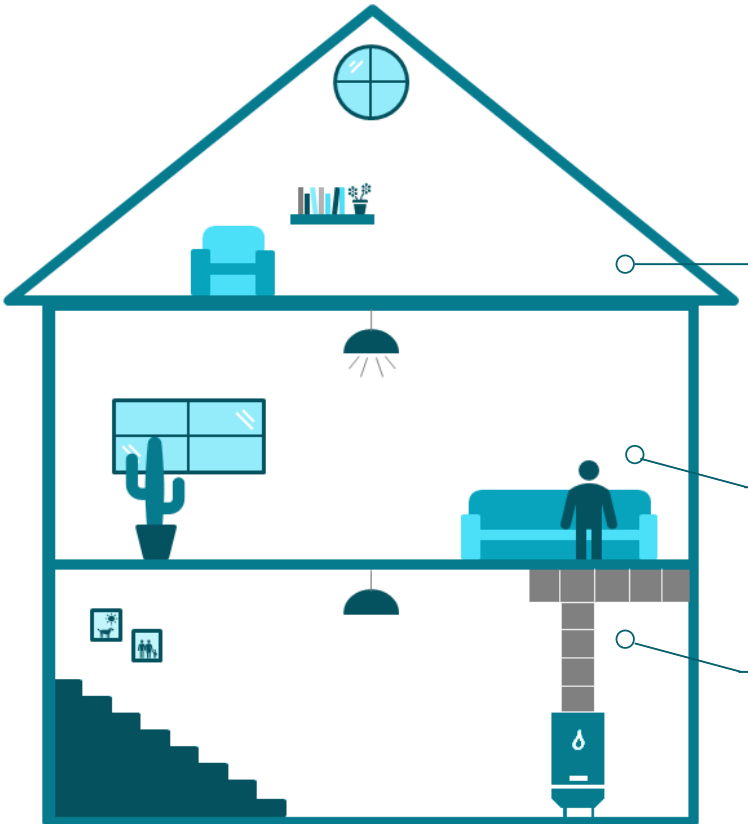
While customers are highly satisfied with this popular program, we identified several actionable insights and recommendations for increasing the program's effectiveness and capturing additional savings.

Key Findings: 'Low Hanging Fruit' in Air Sealing, Duct Sealing, & Insulation

The team examined homes for air and duct sealing opportunities missed by HES vendors. Many contained instances of readily-accessible improvements missed by vendors.

Air Sealing Opportunities: 46% of Attics, 56% of Attic Hatches, 74% of Basement Ceilings, 72% of Basement Rim Joints

Duct Sealing Opportunities: 53% of Duct Systems; 15% of Ducts exhibited no improvement post-program



Lessons from On-sites

Overall, the **insulation installation quality** in attics was high. Installation quality is ranked from I (high) to III (poor). Sixty-one percent of attic insulation installations were rated grade I. In general, blown-in or spray-applied products tended to result in higher quality installations, while batt material often had gaps and compression.

Health and safety issues were commonly encountered by program staff:
- Occurred in around 25% of sites
- Include mold, asbestos, gas leaks
- Significant waste of program time and resources

Basement insulation quality was lacking, especially compared to attics. Duct foil tape was commonly used to seal duct systems, a product with reduced longevity compared to other solutions, like duct mastic.