



THE DOE HOME IMPROVEMENT EXPERT PROGRAM—HAVE YOU TAKEN ADVANTAGE YET?

Peter Troast, Founder & CEO

Energy Circle Webinar Series

September 23, 2020

Upcoming Webinars

~~Wednesday, 9/9, 5PM eastern~~

~~**Don't Let Your Coop Funds Go to Waste—Get the Most Bang for Your Buck Before Year's End**~~

~~Wednesday, 9/16, 5PM eastern~~

~~**The Landscape of Local Search: The Latest News on the Ever-Evolving Territories of Google and Apple**~~

Wednesday, 9/23, 5PM eastern

The DOE Home Improvement Expert Program—Have You Taken Advantage Yet?

Wednesday, 9/30, 5PM eastern

Special Panel Discussion: Insulation and Ventilation Demand This Fall—Priorities at Odds in the COVID-19 Era?

Wednesday, 10/7, 5PM eastern

Engagement: How to Win at Giving Google What it Wants

Wednesday, 10/21, 5PM eastern

6 Hidden Things That Could Be Dragging Down Your Website Performance

Energy Circle On The Road Interwebs

10/06 - 10/08: **Oregon Solar Energy Conference**

<https://www.oseia.org/osec>

10/20 - 10/21: **Building Performance Association 2020 Regional Education Series: Midwest**

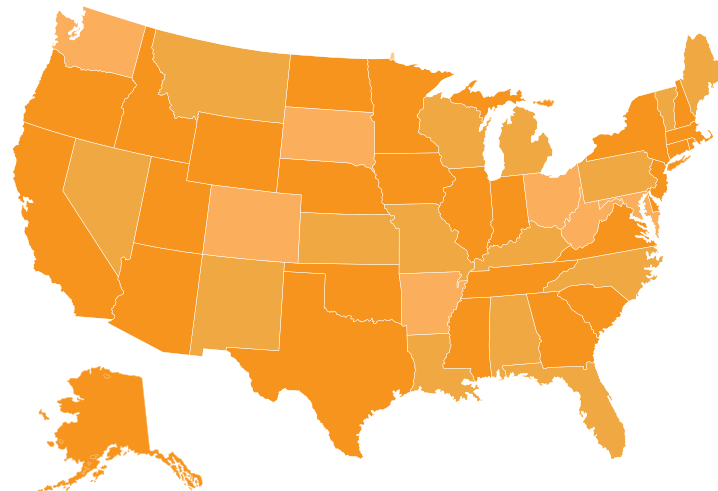
<https://events.building-performance.org/regional/midwest>

10/27 - 10/29: **IAQ & Energy Conference**

<https://www.iaqandenergy.com>

11/18 - 11/19: **Building Performance Association 2020 Regional Education Series: New England**

<https://events.building-performance.org/regional/new-england>





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A Closer Look at Ventilation: Part 3 - Can Our Office HVAC System Meet COVID-19 Guidelines?



By Cory Allyn | September 3, 2020

Ventilation isn't the magic bullet that's going to solve the COVID-19 pandemic and instantly make any indoor space healthy and safe for its occupants. But it's increasingly being talked about as an important factor in reducing the risk of transmission for schools and office spaces that are looking to reopen this fall, alongside more familiar safety protocols like masks, social distancing, and personal hygiene practices.

In last week's installment of our ongoing series on ventilation, we took a look at the growing awareness of COVID-19 airborne transmission, as well as media coverage of ventilation and air purification in schools and commercial spaces. We also provided an overview of our own HVAC system, which includes an HRV ventilation unit, as an example of an existing system that goes above and beyond what's currently installed in the average office space.

This week we're diving into the specifics: Even if we have an advanced commercial HVAC system, how do we know if we're meeting coronavirus guidelines about ventilation, filtration, and air purification? Using the Energy Circle office as a case study, we try to answer some important questions about the health and safety risks of returning to work.

What Are COVID-19 Ventilation Standards, and Are We Meeting Them?

COVID helped us realize that our state-of-the-art HVAC system has pretty much been in "set it and forget it" mode for most of its operating life. A Foobot monitor had been telling us our IAQ was mostly good, our energy bills are OK, and it feels like a quality environment—crisp and comfortable, even on the 5 dog days. But as the attention on airborne transmission of the coronavirus has risen, we realized that we didn't fully



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3 Major Ways COVID-19 Has Impacted the HVAC, Home Performance & Solar Industries - And How to Shift Your Digital Marketing Strategy



By Shawn Cohen | September 16, 2020

Over the last six months, we've talked at length about how the Coronavirus pandemic has impacted businesses in the better building and clean energy industries. We've explored how consumer search and purchasing behavior has changed and the effect those changes have had on how HVAC, home performance and solar contractors market and deliver their services. As we look ahead to the end of this year and beyond, there are still a lot of questions about how best to realign with home owners and consumers in this new landscape.

We've dug through the vast amount of research and content we've developed over the past six months to zero in on what we at Energy Circle believe to be some of the most significant trends and shifts caused by the pandemic, and offer some tips for how HVAC, home performance, and solar contractors can shift with the times.

1. It's a New Low-Touch, High-Tech World

The Impact:

Initially, fears about surface transmission meant in-home service businesses like HVAC and home performance companies had to shut down operations completely. As the economy began to reopen, businesses had to ramp up their safety precautions and, in many cases, develop brand new processes to adhere with health and

What We'll Discuss

- 1 Quick Intro: Home Improvement Experts™ Program**
- 2 Aligning Expectations & Why Energy Circle is Excited About HIE**
- 3 Sales & Marketing Strategies to Take Advantage**



**INTRO:
THE HOME IMPROVEMENT
EXPERTS™ PROGRAM**

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Log in or register to create Field Kits and Sales Worksheets. [Why register?](#)

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Building America Solution Center

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ENERGY STAR Certified Homes

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Sales Tool

Code Briefs

Case Studies

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Research Tracker

Home Improvement Expert™

Why Home Improvement Expert?

Home Improvement Expert is an easy way to get a quality job for energy equipment replacement and other retrofit projects. Research findings reveal that when improvements are properly installed, energy savings can be high with performance risks minimized. However, improper installations can significantly reduce these benefits and increase performance risks. Homeowners can leverage these expert recommendations to help ensure quality installations by attaching Home Improvement Expert checklists to vendor contracts and only accepting the work after vendors complete and sign the checklists.


Who is the Home Improvement Expert? The Home Improvement Expert does not refer to any one person, but rather the combination of expertise from Building America researchers, the U.S. Department of Energy, and DOE's national labs. The Home Improvement Expert brand brings together their best and most useful insights to give every American access to high quality home energy improvements.

Ready To Do More?


This U.S. Department of Energy Home Improvement Expert website provides access to factsheets and checklists that cover more than 20 home improvements. Use them to help optimize energy savings and improve performance related to comfort, health, safety, and durability. See all factsheets/checklists by clicking "View Checklists;" click "Partner Resources" to become a partner and download customized checklists; use the "Partner Map" to find partners around the country.

Looking for Consumer Information?


If you are a homeowner, visit the consumer [Home Improvement Expert Website](#) for more information.



View Checklists




Partner Resources



Partner Map

Building America Solution Center

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Home Improvement Expert™ Checklists

Home Improvement Expert™ is an easy way to get a quality job.

Proper installation of all home improvements related to energy efficiency is critical but often a significant challenge for homeowners. Research findings reveal significantly reduced energy savings and potential performance risks where home improvements are not properly installed. Now the U.S. Department of Energy has a tool that homeowners can use to help ensure quality installation. Home Improvement Expert fact sheets and checklists compile best practices from industry leaders and national laboratories for twenty-one home improvements related to energy efficiency.

All homeowners have to do to hold projects accountable to these standards for excellence is include one or more of the appropriate checklists in their vendor contracts. In doing so, homeowners will act in their best self-interest to optimize energy efficiency, comfort, health, durability, and safety.

Find all of the Home Improvement Expert fact sheets and checklists below and click to download them for your next home improvement project.

ENCLOSURE UPGRADES

- + Attic Air Sealing and Insulation
- + Basement Wall Insulation
- + Framed Wall Insulation
- + Masonry Wall Insulation
- + Home Air Sealing
- + Vented to Unvented Attic
- + Vented to Unvented Crawl Space
- + Window Replacement

HEATING & COOLING

- + Air Conditioner Replacement
- + Gas Furnace Replacement
- + Heat Pump Replacement
- + Oil or Gas Boiler Replacement
- + Duct Sealing and Insulation

» Did You Know?
Research findings reveal most HVAC installations do not meet manufacturer specifications, which can reduce efficiency up to 20% and cause comfort problems.

Home Improvement Expert™ Factsheet Heat Pump Replacement

WHY HOME IMPROVEMENT EXPERT?

An easy way to get a quality job.

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READY TO DO MORE?

This factsheet and accompanying checklist cover one of more than 20 home improvements covered by the U.S. Department of Energy Home Improvement Expert. Use them to help optimize energy savings and improve performance related to comfort, health, safety, and durability.

To download other checklists: bascc.pnnl.gov/home-improvement-expert

For more customized home improvement recommendations:

- Get your *Home Energy Score* from a qualified assessor (www.home-energy-score.gov)
- Schedule an expert assessment through Home Performance with ENERGY STAR® (www.energystar.gov/homeperformance).



BENEFITS

Installed correctly, energy efficiency systems for heating and cooling can help reduce energy costs and improve indoor air quality. Homeowners can therefore per

RELATED HOME IMPROVEMENTS

Before purchasing an energy efficiency assessor or energy auditor includes:

- selection of energy efficiency upgrades and
- integration of energy efficiency upgrades with other home improvements that particulates

For more information, visit the Home Improvement Center, bascc.pnnl.gov

TIPS FOR HOMEOWNERS

- Look for local energy efficiency incentives and rebates
- Check references and reviews of contractors
- Get multiple quotes from qualified contractors
- Check with your local utility for rebates and incentives
- Include the quality installation in your contract
- Consider using a Home Performance with ENERGY STAR Analyst or the work.

HOME IMPROVEMENT EXPERT

ENCLOSURE UPGRADES

Attic Air Sealing and Insulation

Basement Wall Insulation

Framed Wall Insulation

Masonry Wall Insulation

Home Air Sealing

Vented to Unvented Attic

Vented to Unvented Crawl Space

Window Replacement

HEATING & COOLING

Air Conditioner Replacement

Gas Furnace Replacement

Heat Pump Replacement

Duct Sealing and Insulation

Oil or Gas Boiler Replacement

HOT WATER HEATING

Gas Tank Water Heater

Gas Tankless Water Heater

Heat Pump Water Heater

FRESH AIR SYSTEM

Bathroom Exhaust Fan

Kitchen Exhaust Fan

Balanced HRV/ERV

Balanced Supply plus Exhaust

Supply Integrated with HVAC

PROPER INSTALLATION

Through the research and optimization process, the checklist includes a set of specifications (shown below) to ensure their upgrade safety, indoor air quality, and energy efficiency.

STEP 1:

Have expert assess energy efficiency, health, and safety.

STEP 2:

Ensure energy efficiency.

STEP 3:

Ensure airtightness of walls and ceilings.

STEP 4:

Capture insulation and air sealing.

STEP 5:

Insulate for your climate zone and quality, airtightness.

ANYTIME

Replace windows they fail to meet qualified energy efficiency requirements.

Checklists

Home Improvement Expert™ Checklist Heat Pump Replacement



This U.S. Department of Energy checklist includes important specifications that can contribute to a complete and quality installation. All work shall comply with these specifications, all relevant codes and standards, and all manufacturer installation instructions. The contractor shall check each box on the checklist below and sign and date at the bottom to certify the work is completed.

PREPARATION

- All exposed ducts (e.g., attic, basement, and crawlspace) shall be inspected; all damaged or disconnected ducts shall be repaired or replaced, and all visible leaks shall be sealed with UL 181 tape and/or mastic.
- A room-by-room load calculation shall be performed in accordance with the Air-Conditioning Contractors of America [ACCA] Manual J.
- The heat pump selected shall be ENERGY STAR certified and sized in accordance with ACCA Manual S based on ACCA Manual J load calculation results.
- The system shall be evaluated to determine if the supply and return air flows are balanced and if ducts are properly sized. Recommendations shall be made to the homeowner if the ducts are not the right size.

INSTALLATION

- The heat pump shall be installed in accordance with ANSI/ACCA Standard 5 HVAC Quality Installation Specifications.
- The air filter shall be replaced with a MERV 8 or higher filter selected for appropriate air flow across the coil.
- If the air filter is installed in a filter media box attached to the air handler, the access panel for the filter should be fitted with a flexible, air-tight gasket to prevent air leakage.
- Where a new thermostat location is provided, it shall be located on an interior wall away from heating or cooling registers, appliances, lighting fixtures, exterior doors, skylights, windows, and areas that receive direct sunlight or drafts.

COMMISSIONING

- Proper refrigerant charge shall be verified in accordance with the manufacturer's instructions.
- Pressure balance testing (pressure pan and/or flow hood) for proper room-to-room air flow shall be performed and adjustments shall be made to address any imbalances.
- Air flow across the coil shall be tested following procedures approved by ANSI/ACCA Standard 5 QI-2015 to verify it is within the CFM range specified by the equipment manufacturer. If it is not, adjustments shall be made as required.
- The home shall be inspected for the presence of a whole-house ventilation system. If one is present, the actual air flow shall be tested and verified to meet or exceed a target ventilation rate based on house size as follows: 50 cfm for up to 1,500 ft², 70 cfm for 1,501 to 2,500 ft², and 100 cfm over 2,500 ft², per ASHRAE 62.2-2013. Recommendations shall be made to the homeowner for either installing a new whole-house ventilation system compliant with the target rate if one is not present, or repairing an existing system to be compliant with the target rate if airflow is not adequate.

I hereby certify that, to the best of my knowledge and ability, all checked items on the above checklist have been accomplished as part of completion of this home upgrade.

Contractor Signature: _____ Date: _____

Contracting Organization: _____

THE U.S. DEPARTMENT OF ENERGY DOES NOT WARRANT OR ENDORSE THE WORK, PRODUCTS, OR SERVICES OF ANY OF ITS PARTNERS.

Home Improvement Expert™ Factsheet Heat Pump Replacement



WHY HOME IMPROVEMENT EXPERT?

An easy way to get a quality job.

Research findings reveal significantly reduced energy savings and potential performance risks where home improvements are not properly installed. To help homeowners address this challenge, the U.S. Department of Energy has compiled world-class expert guidance from industry leaders and national laboratories in factsheets and checklists under the name *Home Improvement Expert*. Homeowners can leverage these expert recommendations to help ensure quality installation by attaching Home Improvement Expert checklists to vendor contracts and ensuring the vendor completes and signs the checklist before accepting the work.

READY TO DO MORE?

This factsheet and accompanying checklist cover one of more than 20 home improvements covered by the U.S. Department of Energy Home Improvement Expert. Use them to help optimize energy savings and improve performance related to comfort, health, safety, and durability.

To download other checklists: basic.pnnl.gov/home-improvement-expert

For more customized home improvement recommendations:

- Get your *Home Energy Score* from a qualified assessor (www.home-energy-score.gov)
- Schedule an expert assessment through Home Performance with ENERGY STAR® (www.energystar.gov/homeperformance).

BENEFITS

Installed correctly, a new heat pump can cut utility expenses while improving comfort.

Systems for heating and cooling your home use more energy and cost more money than any other system in your home—typically over 50% of your utility bill. High-efficiency heat pumps such as variable-speed systems save energy and last longer. However, a quality installation is integral to a well-performing system. Nearly half of all heating and cooling systems in U.S. homes are not installed to manufacturer's instructions and therefore perform below rated capacity and efficiency.

RELATED HOME IMPROVEMENT CONSIDERATIONS

Before purchasing a new heat pump, consider working with a qualified home energy assessor to evaluate other related home performance needs and opportunities. This includes:

- selection of two-speed or variable-speed equipment that can better adapt to significantly reduced heating and cooling loads when insulation and air sealing upgrades are planned;
- integration of fresh air into the heating and cooling system to provide ventilation; and
- integration of high-capture filters in the return duct to more effectively remove particulates from the air you breathe.

For more information on heat pumps, please search the Building America Solution Center, basic.pnnl.gov

TIPS FOR HIRING A CONTRACTOR

- Look for licensed, insured, and certified contractors.
- Check references and reviews on home improvement web sites.
- Get multiple bids in writing.
- Check with your utility and state, local, and federal weatherization programs for rebates and incentives.
- Include the Home Improvement Expert™ checklist in bids and contracts to ensure quality installation.
- Consider using a Residential Energy Services Network (RESNET) certified Home Energy Rating System (HERS) rater, Building Performance Institute (BPI) certified Building Analyst, or other qualified professional (e.g., licensed engineer or architect) to inspect the work.

Fact Sheets

Home Improvement Expert™ Checklist Heat Pump Replacement

SEQUENCING OF HOME IMPROVEMENTS

Through the U.S. Department of Energy's Building America arch program, expert guidance has been developed for optimizing whole-house energy-efficiency upgrades. This factsheet provides a recommended sequence for home improvements (shown below) to help ensure homeowners get the most out of their upgrade investments while minimizing potential harm to health, indoor air quality, and moisture issues. The contractor shall check each box on the checklist below and sign and date at the bottom to certify the work is completed.

EP 1: ENSURE SAFE AND DURABLE

Energy experts assess opportunities to improve energy efficiency and identify comfort, moisture management, health, and safety issues.

- All exposed ducts (e.g., attic, basement, and crawlspace) shall be inspected; all damaged or disconnected ducts shall be repaired or replaced, and all visible leaks shall be sealed with UL 181 tape and/or mastic.

EP 2: ENSURE FRESH AIR

Ensure effective ventilation before increasing air tightness. The system shall be evaluated to determine if the supply and return air flows are balanced and if ducts are properly sized.

- Fresh air intake shall be made to the homeowner if the ducts are not the right size.

EP 3: ENSURE MOISTURE CONTROL

Ensure adequate water protection before reducing the ability of walls to dry by adding air sealing and insulation.

- The heat pump shall be installed in accordance with ANSI/ACCA Standard 5 HVAC Quality Installation Specifications.
- The air filter shall be replaced with a MERV 8 or higher filter selected for appropriate air flow across the coil.

EP 4: ENSURE DRAFT-FREE

Ensure air sealing opportunities are not a possible air leakage path after installation.

- Where a new thermostat location is provided, it shall be located on an interior wall away from heating or cooling registers, appliances, lighting fixtures, exterior doors, skylights, windows, and areas that receive direct sunlight or drafts.

COMMISSIONING

EP 5: ENSURE THERMAL COMFORT

Proper refrigerant charge shall be verified in accordance with the manufacturer's instructions. Proper refrigerant charge shall be verified in accordance with the manufacturer's instructions. Proper refrigerant charge shall be verified in accordance with the manufacturer's instructions.

- Air flow across the coil shall be tested following procedures approved by ANSI/ACCA Standard 5 QI-2015 to verify it is within the CFM range specified by the equipment manufacturer. If it is not, adjustments shall be made as required.

RYTIME: EQUIPMENT UPGRADES

The home shall be inspected for the presence of a whole-house ventilation system. If one is present, the actual air flow shall be tested to ensure it meets the target ventilation rate based on house size as follows: 50 cfm for up to 1,500 ft², 70 cfm for 1,501 to 2,500 ft², and 90 cfm for 2,501 to 4,500 ft². Recommendations shall be made to the homeowner for either installing a new system compliant with the target rate if one is not present, or repairing an existing system to be compliant with the target rate if airflow is not adequate.

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I hereby certify that, to the best of my knowledge and ability, all checked items on the above checklist have been accomplished as part of completion of this home upgrade.

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Date: _____

Contracting Organization: _____

Checklists

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READY TO DO MORE?

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For more customized home improvement recommendations:

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BENEFITS

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Center, bascc.pnnl.gov

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HOME IMPROVEMENT EXPERT

ENCLOSURE UPGRADES

- Attic Air Sealing and Insulation
- Basement Wall Insulation
- Framed Wall Insulation
- Masonry Wall Insulation
- Home Air Sealing
- Vented to Unvented Attic
- Vented to Unvented Crawl Space
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HEATING & COOLING

- Air Conditioner Replacement
- Gas Furnace Replacement
- Heat Pump Replacement
- Duct Sealing and Insulation
- Oil or Gas Boiler Replacement

HOT WATER HEATING

- Gas Tank Water Heater
- Gas Tankless Water Heater
- Heat Pump Water Heater

FRESH AIR SYSTEM

- Bathroom Exhaust Fan
- Kitchen Exhaust Fan
- Balanced HRV/ERV
- Balanced Supply plus Exhaust
- Supply Integrated with HVAC

PROPER SEQUENCING OF HOME IMPROVEMENTS

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STEP 1: ENSURE SAFE AND DURABLE
Have experts assess opportunities to improve energy efficiency and identify comfort, moisture management, health, and safety issues.



STEP 2: ENSURE FRESH AIR
Ensure effective ventilation before increasing air tightness.



STEP 3: ENSURE MOISTURE CONTROL
Ensure adequate water protection before reducing the ability of walls to dry by adding air sealing and insulation.



STEP 4: ENSURE DRAFT-FREE
Capture air sealing opportunities not accessible after insulation is installed.



STEP 5: ENSURE THERMAL COMFORT
Insulate at least to the latest national code recommendations for your location after addressing related safety, indoor air quality, and moisture management issues.

ANYTIME: EQUIPMENT UPGRADES
Replace heating and cooling equipment, water heaters, windows, appliances, lighting, fans, and electronics when they fail or become out of date with ENERGY STAR® qualified products or better, and improve systems to operate more efficiently.

Home Improvement Expert™ Checklist Heat Pump Replacement

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Date: _____

Checklists

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BENEFITS

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RELATED HOME IMPROVEMENT CONSIDERATIONS

Before purchasing a heat pump, consider working with a qualified home energy assessor to evaluate other related home performance needs and opportunities. This includes:

- selection of two-speed or variable-speed equipment that can better adapt to significantly reduced heating and cooling loads when insulation and air sealing upgrades are planned.
- integration of fresh air into the heating and cooling system to provide ventilation; and
- integration of high-efficiency return duct to more effectively remove particulates from the air you breathe.

For more information on heat pumps, please search the Building America Solution Center, basic.pnnl.gov or Gas Boiler Replacement

TIPS FOR HIRING A CONTRACTOR

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- Get multiple bids from qualified contractors.
- Check with your utility, state, and federal weatherization programs for rebates and incentives.
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- Balanced Supply plus Exhaust
- Supply Integrated with HVAC

PROPER

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STEP 2:

Ensure e

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STEP 4:

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Insulate for your quality, s

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COMMISSIONING

- Proper refrigerant charge shall be verified in accordance with the manufacturer's instructions.
- Pressure balance testing (pressure pan and/or flow hood) for proper room-to-room air flow shall be performed and adjustments shall be made to address any imbalances.
- Air flow across the coil shall be tested following procedures approved by ANSI/ACCA Standard 5 QI-2015 to verify it is within the CFM range specified by the equipment manufacturer. If it is not, adjustments shall be made as required.
- The home shall be inspected for the presence of a whole-house ventilation system. If one is present, the actual air flow shall be tested and verified to meet or exceed a target ventilation rate based on house size as follows: 50 cfm for up to 1,500 ft², 70 cfm for 1,501 to 2,500 ft², and 100 cfm over 2,500 ft², per ASHRAE 62.2-2013. Recommendations shall be made to the homeowner for either installing a new whole-house ventilation system compliant with the target rate if one is not present, or repairing an existing system to be compliant with the target rate if airflow is not adequate.

I hereby certify that, to the best of my knowledge and ability, all checked items on the above checklist have been accomplished as part of completion of this home upgrade.

Contractor Signature: _____ Date: _____

Contracting Organization: _____

Checklists Cover 21 Measures

ENCLOSURE UPGRADES

- + Attic Air Sealing and Insulation
- + Basement Wall Insulation
- + Framed Wall Insulation
- + Masonry Wall Insulation
- + Home Air Sealing
- + Vented to Unvented Attic
- + Vented to Unvented Crawl Space
- + Window Replacement

HEATING & COOLING

- + Air Conditioner Replacement
- + Gas Furnace Replacement
- + Heat Pump Replacement
- + Oil or Gas Boiler Replacement
- + Duct Sealing and Insulation

FRESH AIR SYSTEM

- + Bathroom Exhaust Fan
- + Kitchen Exhaust Fan
- + Balanced HRV/ERV
- + Balanced Supply plus Exhaust
- + Supply Integrated with HVAC

HOT WATER HEATING

- + Gas Tank Water Heater
- + Gas Tankless Water Heater
- + Heat Pump Water Heater

Coming
Soon:

**Solar
Electric**

**High
Capture
Filters**

ENCLOSURE UPGRADES

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- + Framed Wall Insulation
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- + Supply Integrated with HVAC

HOT WATER HEATING

- + Gas Tank Water Heater
- + Gas Tankless Water Heater
- + Heat Pump Water Heater

Fresh Air System: Balanced HRV/ERV

PREPARATION

- For continuous operation, the target ventilation rate for the home shall be based on house size as follows: 50 cfm for up to 1,500 ft², 70 cfm for 1,501 to 2,500 ft², and 100 cfm over 2,500 ft². For intermittent operation, the average air flow shall meet the minimum target ventilation rate specified above (e.g., if the controller operates the air handler fan for a minimum of 20 minutes each hour, then three times the target ventilation air flow is needed).
- Appropriate ventilation equipment shall be selected based on the target ventilation rate and the climate.

INSTALLATION

- The ERV/HRV shall either be connected to the central air handler and use the HVAC ducts for supply air, or have its own independent supply ducts. Return air intakes can either be individually ducted from several rooms or ducted from one or more central locations, or the ERV/HRV can use the HVAC system returns. It is recommended that each occupied room with a door have at least one ducted supply, or one ducted return, or both.
- An HRV/ERV that is connected to the central system supply side shall have a damper to keep air from flowing backward through the unit when the ventilator is off. Each occupied room should have one ducted supply or return or both.
- Outdoor air shall be filtered with a MERV 11 filter or higher, and the pressure drop across the filter shall match equipment capabilities. The filter shall be installed to be easily accessible by occupants.
- The fan shall be oriented so the equivalent length of the duct run is as short as possible. "Equivalent length" shall be calculated in accordance with ANSI/ACCA Manual D Residential Duct Systems.
- The exhaust duct outlet vent shall be located on the exterior of the home where it does not direct air flow onto a walkway and it is situated at least 10 feet from any air inlet.
- Outdoor air intakes shall be equipped with screens to keep out insects and debris, integrated with siding including flashing required to prevent water intrusion, and sealed with caulk or spray foam where the edges of the duct meet the exterior walls or ceilings to limit the infiltration of exterior air into the home.
- All duct seams and connections shall be sealed with mastic or UL 181 tape.
- Ducts installed outside of the thermal envelope shall be insulated to a minimum of R-8.

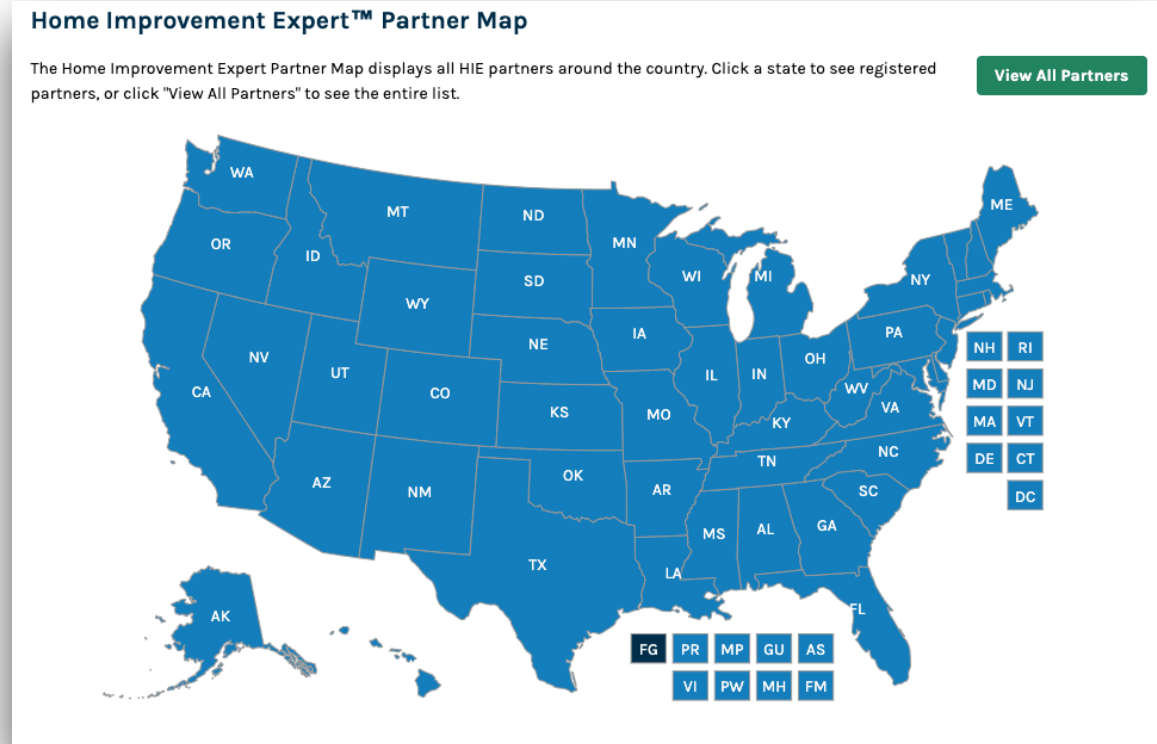
COMMISSIONING

- The ventilation rate shall be measured using a flow hood, flow grid, or anemometer, in accordance with test procedures listed in ANSI/RESNET/ICC 380-2016, to ensure that the fan is providing the minimum ventilation rate specified above.
- All operation and maintenance procedures shall be reviewed with the homeowner (e.g., how and when to change filter).
- All operation and maintenance procedures shall be reviewed with the homeowner (e.g., how and when to clean the intake screen).

Wide Open Opportunity for Contractors

Most States

< 5-8 Contractors



Agreement with DOE

Home Improvement Expert Partner Commitments to DOE

1. Partner will promote and distribute HIE fact sheets and checklists on at least three consumer-facing communications each year. Communications can include product packaging, in-store displays, company/organization web site, advertising, brochures, blogs and/or signage intended to reach the general public.
2. Partner will provide a link from their website to DOE's Home Improvement Expert page on DOE's Home Energy Saver website – the DOE website for consumer content on energy efficiency. To ensure that viewers will see DOE's most up-to-date information, Partner will link to the DOE website rather than downloading portions of the DOE website to another web server.
3. Partner will educate their own employees/staff about HIE program.
4. Partner will maintain an active partnership by meeting the agreed upon commitment to promote HIE and report to DOE on a quarterly basis the activities they have undertaken as part of the HIE program. Partners not fulfilling this requirement will be deemed 'inactive' and must promptly cease all association with HIE. DOE will notify partner by email of any nonconformance regarding this commitment and provide 30 calendar days to comply before taking action to deem inactive.
5. Partner will only use DOE Logo on HIE fact sheets and checklists. Partner may add their logo to fact sheets and checklists for co-branding with the HIE program, but shall not alter the content in any other way without express written permission from DOE.
6. In any written materials, documents, or other representations to its home improvement customers, Partner and any Partner affiliated entities, will not use any language that constitutes or implies an endorsement by DOE of any of its products or services.



WHY ENERGY CIRCLE

(wearing demand generation/marketing hat)

IS EXCITED ABOUT HOME IMPROVEMENT EXPERTS

Set Your Expectations



We Think This is a Significant Opportunity

- **High Trust of US Department of Energy**
- **Expert Third Party Authority on Jobs Done the Right Way**
- **Key Differentiator Against “Regular” Contractors**
- **Antidote to Low Price Competitors**
- **Powerful Messaging for Marketing & Sales**



MARKETING STRATEGIES TO TAKE ADVANTAGE

The Quest for Quality Links: Great One!

Georgia

Arbor Insulation Solutions

2300 Holcomb Bridge Road, #103-126

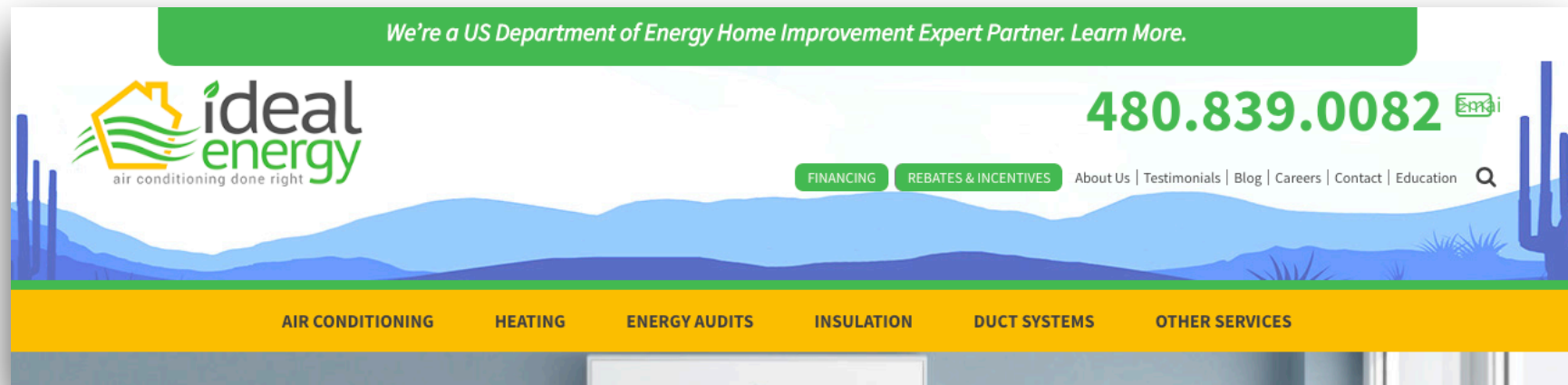
Roswell, GA 30022

(404) 728-0001

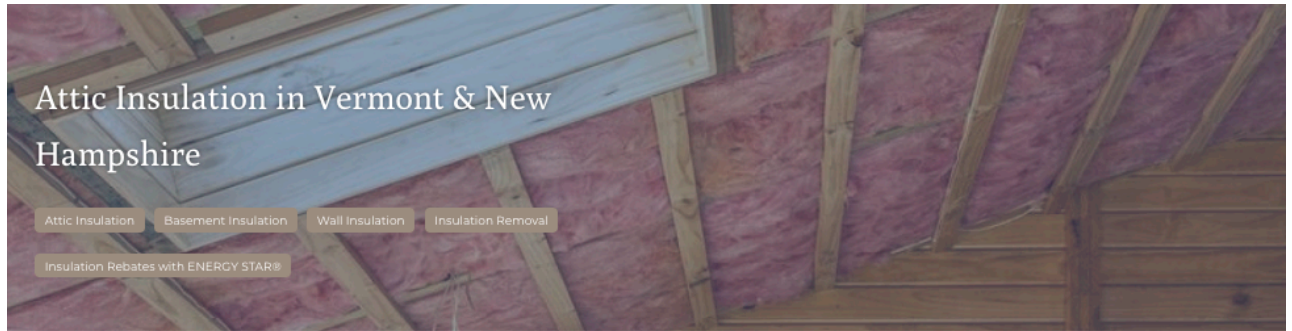
<http://www.AtlantaInsulationSolutions.com>

Make a Splash Upon Sign Up

- **Press Release or Blog Post**
- **Distribution to Local Media**
- **Mention in About Us pages**
- **Inclusion in Email Newsletter**



Beef Up Key Service Pages



Whether you want to make the second floor of your home cooler in the summer, or you're looking for ways to keep your energy bills down year-round, there are many reasons you might decide to upgrade your attic [insulation](#). Attic insulation is one of the most cost effective home improvements you can make for greater indoor comfort, increased energy savings, and longer lasting heating and cooling equipment. And with [insulation rebates](#) available through Home Performance with ENERGY STAR® (HPwES), insulating your attic is more affordable than ever.

Vermont Foam Insulation is proud to offer expert attic insulation services for homeowners throughout southern Vermont and southwestern New Hampshire, including Rutland, Brattleboro, and Keene.

The Best Types of Insulation for Attics

When choosing the [best types of insulation](#) for your attic, our team will consider your attic's unique insulation needs, as well as how you plan to use your attic space. We typically install spray foam insulation and blown in cellulose insulation in attics here in southern Vermont and southwestern New Hampshire.

Spray foam insulation

Spray foam insulation is one of the most effective insulation materials on the market. In addition to controlling heat flow, it also offers air and moisture resistance. We typically use spray foam in the attic to seal air leaks around recessed lighting, the attic hatch, and other key areas. If the attic will become a finished space, we will apply spray foam to the roof slope above.

The spray foam insulation we install is made from renewable materials and has an R value (effectiveness rating for controlling heat flow) of R7.5.

Blown-in cellulose insulation

Blown in cellulose insulation is made from recycled newspaper that has been treated to provide fire, mold, and pest resistance. Many homeowners like blown-in cellulose because it is especially eco-friendly and offers impressive thermal resistance. We typically install blown-in cellulose in loose fill form over the attic floor when the attic will remain an unfinished space.

Air Sealing Goes Hand in Hand with Insulation

Experience the benefits of proper attic insulation.

Book a free site visit to get started! 802-231-4616

Name *

Phone * Email *

City/Town * State *

Question or Comment

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GET STARTED

Our Work Standards:

ENERGY

DO THE ENERGY EFFICIENT & AFFORDABLE ENERGY

Home Improvement Expert™ FactSheet
Attic Air Sealing and Insulation

WHY HOME IMPROVEMENT EXPERT?

An easy way to get a quality job. Research findings reveal significant risk-and energy savings and potential performance risk where home improvements are not properly installed. To help homeowners address this challenge, the U.S. Department of Energy has compiled scientific expert guidance from industry leaders and national laboratories in fact sheets and checklists under the name Home Improvement Expert. Homeowners can leverage these expert recommendations to help ensure quality installation by engaging Home Improvement Expert checklists to vendor contracts and ensuring the vendor completes and signs the checklist before accepting the work.

READY TO DO MORE?

This fact sheet and accompanying checklist cover one of more than 20 home improvements covered by the U.S. Department of Energy Home Improvement Expert. Use them to help optimize energy savings and improve performance related to comfort, health, safety, and durability.

To download other checklists, [visit post.gov/homeimprovementexpert](#)

For more commercial home improvement recommendations:

- Get your Home Energy Score from a qualified assessor: [https://www.energyscore.gov/](#)
- Schedule an expert assessment through Home Performance with ENERGY STAR: [www.energyscore.gov/homeperformance](#)

BENEFITS

Done correctly, attic air sealing and insulation can reduce utility costs while improving comfort, indoor air quality, and durability.

In older homes, attics may have weathered holes, cracks, and missing air barriers and inefficient insulation that allow unwanted heat loss in cold weather, heat gain in hot weather, and infiltration of contaminants year-round. Air sealing, uncontrolled leaks and adding insulation between the attic and the home is one of the most cost-effective measures to improve your home's performance. It can reduce your heating and cooling bills, improve comfort by stopping drafts, keep contaminants such as moisture, dust, and pests from entering your home, and reduce moisture-related durability problems.

RELATED HOME IMPROVEMENT CONSIDERATIONS

Before air sealing and insulating your home's attic, consider working with a qualified home energy assessor to help ensure combustion safety and sufficient fresh air once the home is made more airtight. They will check for:

- required combustion air for any natural draft combustion equipment (e.g., if the home has a natural draft furnace, stove, or water heater);
- exhaust fans in bathrooms to remove moisture; and
- an exhaust fan in the kitchen to remove cooking emissions.

For more information on attic air sealing, please search the Building America Solution Center: [https://baec.org](#)

TIPS FOR HIRING A CONTRACTOR

- Look for licensed, insured, and certified contractors.
- Check references and review on home improvement web sites.
- Get multiple bids in writing.
- Check with your utility and state, local, and federal weatherization programs for rebates and incentives.
- Include the Home Improvement Expert™ checklist in bids and contracts to ensure quality installation.
- Consider using a Building Energy Service Network (BESN), certified Home Energy Rating System (HERS) rater, Building Performance Institute (BPI) certified Building Analyst, or other qualified professional (e.g., licensed engineer or architect) to inspect the work.

Messaging in Google Ads

Proper Insulation Saves Money | Local Spray
Foam Installer | Call To Insulate Your Home
Ad vermontfoaminsulation.com/home/insulation

Our Work Is Installed According To Department Of Energy
Home Improvement Expert Checklists. Call Vermont Foam
Today To Get A Free Quote & To Hear About Our Various
Insulation Types. Certified & Trained Staff. In Operation...

About Us

Energy Audit

Our Work

Moisture Mitigation

Incorporate in Sales Process

- **Client Presentations**

This is our standard

- **Attachment to Quotes**

- **Use to Overcome Price Objections**

- **Differentiate from Blow & Go/Box Swappers**

Support for Richer Review Copy



Jim Salsgiver

2 reviews

★★★★★ 2 years ago - 

VFI did a great job at my house. We had an old drafty stone-walled basement - full height and crawlspaces. VFI covered the dirt-floored crawlspaces with a heavy-duty plastic we had found & foamed the basement walls from the sills down to the plastic vapor barrier. Made a huge difference. Where they foamed the stone walls - that solved a long-standing water penetration issue, and even brightened up the basement. Customer service was great. The crew was very professional and left the place clean as a whistle. I highly recommend VFI.



1



THANK YOU!

QUESTIONS OR COMMENTS?

peter@energycircle.com



Register for our next FREE Webinar

Challenge Accepted #6: How To Take Advantage of the DOE Home Improvement Expert Program



By Jake VP | November 14, 2019

The building science related research coming out of the Department of Energy is certainly something the better building sector depends on — and heavily. But there hasn't been a way for home performance and HVAC contractors to differentiate themselves from other "regular" contractors when it comes to following the best practices outlined by the Department of Energy...until now.

Last week's [Energy Circle webinar](#) was an introduction into how contractors can now sign up as a Home Improvement Expert Partner, leveraging the credibility and trust of the Department of Energy, as well as giving homeowners the tools they need to differentiate trustworthy contractors from the less desirable "blow and go/box swapping" types.

Today's Challenge: Turning the Home Improvement Expert program into a powerful marketing tool to generate leads and build trust.

The Ask

To inform homeowners in your service area that you are a verified partner with the DOE Home Improvement Expert program (HIE), while adhering to the guidelines and requirements of the Home Improvement Expert Partner Commitments.

How To Sign Up As A Home Improvement Expert Partner

Visit the contractor section of the [Home Improvement Expert website here](#). From there, fill out the registration forms, and sign the Home Improvement Expert Partner Commitments agreement, which looks like this: