HVAC System Replacement

This workshop will teach participants essential information about HVAC System Replacement as it applies to single-family residences. When homeowners purchase a new high-efficiency HVAC system, they expect it to perform at the advertised capacity and efficiency. Unfortunately, more than half of all HVAC systems in U.S. homes are believed to perform poorly due to one or more installation issues, which wastes energy and can increase peak load. By purchasing high efficiency equipment and having it properly installed and tested, a homeowner can lower their energy bills, increase comfort and extend the useful life of the equipment. Participants will learn the basics about HVAC system replacement and the details and techniques for a quality installation. They will also gain practical strategies they can use to help their clients make better decisions. Participants will be equipped to avoid potential risks and identify new opportunities for marketing their services. The information presented in this session will build on the basics of building science covered in the popular EEBA full day Houses That Work session. Participants for this HVAC Systems Replacement session are encouraged to attend a Houses That Work session before taking this workshop.

An important element of the workshop will be to introduce the EPA Energy Star HVAC Quality Installation Program.

Who Should Attend

The workshop is targeted to at least the following groups:

- General contractors who focus their business on the residential remodeling sector
- HVAC contractors
- Real estate agents
- Building supply and manufacturers' representatives
- Utility and housing program officials who promote weatherization programs
- Designers and architects

Relevance to Attendees

- Identify how HVAC systems are related to building science and high performance homes
- Relate the potential impact of HVAC replacement on the building and the occupants
- Apply cost-effective strategies to HVAC system replacement strategies
- Demonstrate energy savings and return on investment to customers

Note:

The workshop will in all cases be adapted to the climate zone and building practices of the local area where it is being presented to ensure it is relevant to participants.

Agenda

Session Segment	Activity Plan	Timing
Introduction to EEBA and Energy Star Program	Facilitator has sponsors and	10 minutes

• The relationship between EEBA, DOE, ENERGY STAR, EPA • Relevance of the "Houses That Work" Program • EEBA publications and education • Introduction of speaker and sponsors	participants introduce themselves and asks participants what prompted their interest in today's session.	
Building Science Fundamentals • Overview of current market opportunities • Review basics of Heat, Air and Moisture flow	Question and Answer: Facilitator shows a series of slides demonstrating building physics. Participants are asked for their insights and experiences.	15 minutes
Home Assessments Achieving the goals of healthy, safe, durable, comfortable and energy efficient housing are key points for selling HVAC replacement to homeowners and starts with an assessment. • Visual inspections are enhanced once a contractor understands how the house works as a system. • Proactively address occupant concerns regarding health and comfort • Review performance testing	Small Group Exercise: Participants work together to list issues regarding assessments Demonstration: Facilitator outlines a method for participants to address key factors of home assessments	15 minutes
Safety and Health Concerns A discussion of the potential safety and health issues related to HVAC system replacement, including: • Combustion safety risks • Radon testing • The roles and responsibilities contractors have in providing healthy indoor air.	Short Lecture: Facilitator reviews risk assessment factors. Small Group Exercise: Participants work together to develop strategies on the major risk factors	15 minutes
Mechanical System Design Developing priorities and strategies for mechanical system selection • Equipment and control options • Sizing guidelines • Equipment efficiencies	Question and Answer: Facilitator shows a series of slides demonstrating system types, controls and efficiency guidelines. Participants are asked for their feedback on their experience.	35 minutes
Distribution Systems Developing priorities and strategies for effective distribution systems • Seal and insulate • Optimize air flow	Question and Answer: Facilitator shows a series of slides demonstrating duct sealing. Participants are asked for their feedback on their experience with duct sealing strategies.	25 minutes
Ventilation Guidelines	Question and Answer:	30 minutes

Developing priorities and strategies to control moisture and pollutants • Fresh air ventilation • Kitchen & bath ventilation • Dehumidification • Filtration	Facilitator shows a series of slides demonstrating ventilation strategies. Participants are asked for their feedback on their experience with these strategies.	
Verifying Performance Key quality installation practices for a successful HVAC system • Testing • Pressure balance of rooms • Proper refrigerant charge	Question and Answer: Facilitator shows a series of slides demonstrating quality installation practices. Participants are asked for their feedback on their experience with these practices.	30 minutes
Demonstrating Energy Savings • Case studies • Features, advantages and benefits of HVAC system replacement • Return on investment	Short Lecture: Facilitator reviews case studies and demonstrates return on investment calculations Small Group Exercise: Participants work together to develop features, advantages and benefit statements	25 minutes
Summary and End of Workshop	Question and Answer: Facilitator asks participants: - new things they have seen that will be easy to implement - things that will take more time to implement	10 minutes

Training Time and CEUs/Professional Development Credits
3.5 Hours of Educational and Training Time

This Seminar qualifies for CEUs/Professional Development Credits from the following accreditation organizations:

Pricing

The hosting fee for this seminar is $6500

The registration fee for this seminar is $65 (online registration) or $70 (on-site registration)*

* The registration fee includes lunch when two half-day sessions are combined for a full day.

Reading Material and Online Resources

The reading material for the course consists of documents, publications and online resources relating to each educational and training seminar. You are welcome to order, view or print the resources if you choose. You can find them by following the links below to the EEBA, Department of Energy and EPA/IAQ websites.

Link / Purchase / Download
Climate Specific Builders Guides
Builder's Guide to Cold Climates
Builder's Guide to Hot-Dry / Mixed-Dry Climates
Builder's Guide to Hot-Humid Climates
Builder's Guide to Mixed-Humid Climates
Online bookstore with EEBA Publications, issue-specific guides, software and tools
Software Resources
Building Better Homes DVD
Online Resources
National Residential Efficiency Measures Database
DOE Building Technologies Program
Building Energy Optimization Software
EEBA National Education Partner Resources & Information