

## **Houses That Work: Indoor Air Quality 'Finding Opportunities & Minimizing Risks for Builders'**

This workshop will teach participants essential information about indoor air quality as it applies to single family residences. Participants will learn the basics about the full range of potential pollutants and their impact on occupants. They will also learn the four important strategies for controlling and improving indoor air quality. This knowledge will empower builders and other participants to sort through the quagmire of IAQ information that is currently available. They will gain practical and affordable tools and strategies they can use to help their clients make better decisions and to incorporate healthy indoor initiatives into their building projects. Participants will be equipped to avoid potential risks and identify new opportunities for marketing healthier homes. 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 IAQ session are encouraged to attend a HTW I session before taking this workshop.

An important element of the workshop will be to introduce EPA's air quality home-labeling program. The "Indoor airPLUS", administered under the ENERGY STAR program, is one tool that helps builders sort through a wide range of construction elements and techniques that can impact indoor air quality.

### **Who Should Attend**

- The workshop is targeted to at least the following groups:
- New home builders and remodelers and their site supervision staff
- Designers and architects
- Estimators and contract managers of builders
- Building supply and manufacturers' representatives who wish to promote materials applicable to the specifications
- Specific trade contractors such as HVAC, foundation, framers, insulators and siding contractors
- Utility and housing program officials who promote ENERGY STAR Homes.
- Energy Raters

### **Relevance to Attendees**

- Identify how IAQ is related to building science and high performance homes
- Describe how indoor air pollutants are related either to construction materials, building techniques and occupant activities
- Relate the potential impact of indoor air pollutants on the building and the occupants

- Describe the four essential strategies for controlling indoor air quality
- Apply cost-effective strategies to specific pollutant sources

**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
<p><b>Introduction to EEBA and its Sponsors</b></p> <ul style="list-style-type: none"> <li>• The relationship between EEBA, ENERGY STAR and EPA</li> <li>• Relevance of the “Houses that Work” Program</li> <li>• EEBA publications and education</li> <li>• Introduction of speaker and sponsors</li> </ul>	<p>Facilitator has sponsors and participants introduce themselves and asks participants what prompted their interest in today’s session.</p>	10 minutes
<p><b>Building Science Principles as they Relate to IAQ</b></p> <p>Review of the key concepts of the “Houses That Work” program that specifically apply to IAQ issues – that is, where this workshop fits in with other EEBA offerings.</p> <ul style="list-style-type: none"> <li>• A short review of building science basics – air, heat and moisture flow as they relate to indoor air quality, house-as-a-system issues, and how small changes can have important impacts</li> <li>• A simple introduction to the ENERGY STAR Indoor airPLUS Package and its relevance during the workshop</li> </ul>	<p><u>Small Group Exercise:</u> Participants work together to list industry changes that could impact IAQ.</p> <p><u>Demonstration:</u> Facilitator asks participants to review the EPA IAP Package and asks for initial reaction and comment.</p>	20 minutes
<p><b>Indoor Air Quality Pollutants and Their Sources</b></p> <p>A discussion of indoor air pollutants, what they are, where they come from &amp; their relevance</p> <ul style="list-style-type: none"> <li>• Categorizing of pollutants – biologicals vs. chemical, outdoor vs. indoor, those associated with buildings and building materials vs. occupant based.</li> <li>• A simple review of the current research and understanding of potential health effects and the impact on occupants.</li> <li>• The roles and responsibilities builders have in providing healthy indoor air.</li> </ul>	<p><u>Short Lecture:</u> Facilitator outlines fundamentals of IAQ pollutants.</p> <p><u>Small Group Exercise:</u> Participants work together to categorize IAQ pollutants and the builder’s role in managing them</p>	25 minutes
<p><b>Indoor Air Quality Control Strategies</b></p>	<p><u>Short Lecture:</u></p>	15 minutes

<ul style="list-style-type: none"> <li>• The essential priorities for IAQ control – removing sources, sealing, ventilating and filtering</li> <li>• Applying these strategies to the list of pollutants developed above</li> </ul>	<p>Facilitator outlines fundamentals of the 4 main IAQ control strategies</p>	
<p><b>Essential Construction Elements</b> Important messages every builder should know on specific construction elements. The discussion will again focus on the basic strategies of Remove, Seal, Ventilate and Filter.</p> <ul style="list-style-type: none"> <li>• Water management details – foundation strategies, flashings, rain screens, penetrations</li> <li>• HVAC impact on IAQ – AC sizing, dehumidification, ventilation, filtration, duct sealing, return air issues, combustion venting, fireplaces, alarm systems</li> <li>• Air sealing - garage to house connections, attics, performance testing of houses and ducts</li> <li>• Selection of building materials</li> <li>• Pest barriers</li> <li>• Radon control</li> </ul>	<p><u>Question and Answer:</u> Facilitator shows a series of slides demonstrating strategies, materials &amp; techniques used throughout a building to ensure good IAQ. Participants are asked for their feedback on their experience with these technologies.</p>	<p>50 minutes</p>
<p><b>The ENERGY STAR IAQ Package - The Benefits and Barriers to Builders</b></p> <ul style="list-style-type: none"> <li>• Relevance &amp; benefits to builders of implementing IAQ initiatives</li> <li>• List of potential barriers to implementing IAQ initiatives at their sites</li> <li>• Sales and marketing techniques to being successful with an IAQ focus</li> <li>• Training of trades and adjusting scopes of work</li> <li>• Commissioning of houses</li> <li>• Homeowner education and “operation manual”</li> <li>• The role of the energy rater</li> <li>• Marketing support &amp; where to go for more detailed information</li> </ul>	<p><u>Small Group Exercise:</u> Participants work together to review the EPA IAP checklist and comment on barriers, opportunities and marketing ideas for implementing the ENERGY STAR IAP Label.</p>	<p>30 minutes</p>
<p><b>Summary and End of Workshop</b></p>	<p><u>Question and Answer:</u> Facilitator asks participants: - two new things they have seen that will be easy to implement - two things that will take more time to implement</p>	<p>10 minutes</p>
<p><b>End of Workshop</b></p>		

## 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



bookstore

online resources

conference & expo

educational & training seminars

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[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](#)

[Indoor AirPlus Program](#)

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