

# Steve Easley

Principal, Steve Easley & Associates

www.steveeasley.com



Steve Easley is an internationally recognized construction consultant specializing in solving building science related problems and educating building industry professionals and their trade partners. His work focuses on increasing quality of construction, sustainability, performance, and reducing costly mistakes that lead to construction defects and call backs.

Steve's mission is helping industry professionals build & remodel structures that are durable, energy efficient, healthy and comfortable to live and work in. He has more than 30 years of industry experience, performing thousands of jobsite quality surveys and presenting building science seminars around the world with an annual audience of 8-10,000 industry professionals.

## Services Provided:

- ✚ Zero Energy Building consulting
- ✚ On site & quality analysis
- ✚ Education & training seminars
- ✚ Product development consulting
- ✚ Best practice building consulting
- ✚ Design review
- ✚ Dispute resolution
- ✚ Litigation support & expert testimony

## Credentials:

- ✚ Building Science Consultant for the CEC/W.I.S.E High Performance Walls and Attics Initiative
- ✚ Tenured Professor of Building Construction & Contracting at Purdue University
  - Robert C. Morris award from the State of Indiana for his work in advancing energy efficiency
  - Inducted into the International Construction Honor Society: Sigma Lambda Chi
- ✚ Selected by DOE as member of the Building America Team for the Build America Retro-fit Alliance
- ✚ Judge for D.O.E.'s Housing Innovation Awards 2014, 2015, 2016, 2017, 2018, 2019, 2020.
- ✚ Member of the 2012 & 2015 National Green Building Standard's Consensus Committee
- ✚ Teaches advanced building science courses for The Energy & Environmental Building Alliance (EEBA)
- ✚ Former advisor to the National Association of Home Builders' Quality in Housing Council
- ✚ Director of the Electric & Gas Industries Association board of directors
- ✚ 2011 Distinguished College of Technology Alumni; awarded by Purdue University faculty

Steve is a frequently requested speaker because of his practical approach to building science. He is known for his dynamic speaking style and his unique ability to explain complex concepts in simple terms that can be easily integrated into practice. Steve speaks regularly for these and other professional organizations and conferences:

- ✚ International Builders Show (IBS) (NAHB)
- ✚ Pacific Coast Builders Conference (PCBC)
- ✚ Construction Specifications Institute (CSI)
- ✚ Energy & Environmental Building Association (EEBA)
- ✚ 21<sup>st</sup> Century Building Expo
- ✚ American Institute of Architects (AIA)
- ✚ West Coast Green Residential Bldg. Conference
- ✚ Residential Energy Services Network (RESNET)

Steve has hosted hundreds of best practice building science videos that can be seen at [www.measuredhomeperformance.com](http://www.measuredhomeperformance.com). These practical, industry focuses videos are viewed by thousands every year. He has also co-hosted hundreds of television and radio programs, including over 100 shows on the Discovery Channel's "Your New House".

Steve has authored numerous articles been featured in periodicals some of which include:

- ✚ *Builder Magazine*
- ✚ *Professional Builder*
- ✚ *Fine Home Building*
- ✚ *Journal of Light Construction*
- ✚ *Custom Builder*
- ✚ *Coastal Contractor*
- ✚ *Popular Science*
- ✚ *Qualified Remodeler*
- ✚ *Green Builder Magazine*
- ✚ *Lumberman's Journal*

## Steve Easley's Seminars

Steve's construction and building science seminars are popular because he brings his extensive field experience and practical common sense approach to solving problems while providing needed education within the industry. Steve is a dynamic speaker with the very unique ability to explain complex building science issues in simple terms. Steve often develops customized presentations for onsite seminars and keynote speeches as well online webinars. Listed below are examples of some of Steve's popular classes.

### Seminar Topics

Seminar Title	Seminar Description
<b>Builders"411"- Fundamentals of Building Science</b>	Understanding basic building physics is critical to building homes that work. This class focuses on understanding how heat, air and moisture movement in buildings impact building performance and product selection. Presenter uses real world practical examples to illustrate how the laws of nature interact with building components. This course is designed to give builders the knowledge to sort out fact from fiction among the myriad of manufacturer claims.
<b>Air, Water and Moisture Management in Commercial Building Envelopes</b>	This seminar addresses the necessity for building redundancy in the commercial building envelope (wall systems) to help reduce damage due to water intrusion and energy loss due to air infiltration. Participants in this seminar will receive an in-depth overview of how moisture infiltrates commercial wall systems. This causes damage to building materials, which contributes to indoor air quality problems and creates costly repair and callbacks. An interactive session quizzes participants on 'what's wrong with this picture or this design detail,' to enhance the learning experience.
<b>Better Design and Building Practices for Reducing Mold, Water and Moisture Problems</b>	Litigation surrounding water and moisture-related problems in residential construction has risen dramatically in recent years. Some experts estimate that as much as 80% of construction defect litigation in the residential construction market segment is due to water and moisture-related failures. Using photos gathered from years of field experience, Steve examines common design defects which create moisture problems and lead to callbacks. We'll also identify and show common installation errors, and help your audience learn how to select building materials that lead to a more durable building.
<b>The Biggest Energy Mistakes Builders Make</b>	When it comes to comfort and energy costs, a home's energy performance often looks good on paper but may not always meet customer expectations. This presentation focuses on technologies and installation practices that provide the "biggest bang for the buck" when it comes to making homes more energy efficient. Steve uses field slides to illustrate cost effective solutions that lead to practical and long-lasting energy savings
<b>Cost Effective Techniques for Green Building</b>	This colorful tour sorts out the facts and fiction with regards to Green building. This class identifies the difference between green products and "green washed products". It helps builders identify ways to affordably "green" their homes for the biggest bang for their buck. The course is the "411" to give builders the knowledge to build truly high performance homes that are durable, safe, healthy, energy efficient and comfortable to live in. The mind set of this class is "The greenest building you can build is the one you don't have to rebuild".

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<b>Cures for Common Callbacks in Homes</b>	In the construction business, it's not how much money you make that makes you successful, it is how much money you get to keep. Callbacks cost money and can damage your company's hard-earned reputation. This seminar covers common callbacks and problems that get builders into trouble. Steve uses real world pictures to illustrate concepts and solutions that provide the biggest bang for the buck in reducing callback costs.
<b>"Liar Liar Pants on Fire"</b>	Homes often look great on paper but their "true life" operational performance often does not perform anywhere close to their design spec. This class examines the common thermal defects that lead to poor performing homes and call backs. The presenter uses slides from hundreds of field investigations to show causes and practical solutions to these construction defects. The focus of this talk is on designing and building homes that are energy efficient, durable and comfortable to live in. Homes that are Energy Star rated must now pass the Energy Star Thermal Bypass Checklist. This class interprets and presents cost effective methods for reducing conductive and convective bypasses to comply with the Energy Star Thermal Bypass Checklist.
<b>Reducing Construction Defects in Multifamily Housing</b>	Construction litigation surrounding multifamily housing is one of the highest in the industry. This presentation will help designers, developers and contractors identify designs, details and construction practices that lead to call backs. The seminar will show examples of design and construction defects that can lead to water intrusion, envelope failures and HVAC related problems.
<b>Heating Ventilation and Air Conditioning for Residential Buildings</b>	Proper HVAC design, sizing and installation are critical to designing and constructing quality buildings that are energy efficient and comfortable. On average, residential HVAC systems are oversized by as much as 10% to 25%. At the same time, poor installation practices account for 25% of heating and cooling costs. Steve uses real life examples to illustrate common mistakes made when designing and installing HVAC systems. Recommendations for installation techniques and technologies for diagnostic procedures are also discussed in detail.
<b>Residential Construction Techniques and Materials</b>	This seminar covers fundamentals of residential construction and how they shape building performance. Steve uses photos from field experience to illustrate the "A to Z" of how homes are built, focusing on learning the terminology, systems and methods used in residential construction. Even experienced contractors will walk away from this seminar with a better understanding of the pros and cons of building methods and materials as they relate to building durability, comfort and energy efficiency.
<b>Residential Indoor Air Quality &amp; Selecting Fresh Air Ventilation Systems</b>	Newer codes are requiring that homes to have 3-5 Air changes per hour. In fact some codes require fresh air ventilation systems. This seminar provides information about how to design and build homes that are comfortable, energy efficient and safe to live in. Steve uses slides to illustrate how the air quality in a home is affected by construction materials, water and moisture problems, furnishings, ventilation, human activities and construction methods. You learn the fundamentals of fresh air ventilation systems, HRV's & ERV's and how to select them. Attendees will learn how to achieve ASHRAE 62.2 ventilation standards. After attending this seminar, participants will walk away with an improved understanding of the causes of poor indoor air quality and the best approaches for providing fresh air ventilation for building healthier homes.

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<b>Advanced Framing &amp; Building High Performance Walls</b>	<p>Framing factors in residential buildings can easily be 25%. This means 25% of your walls are the R-value of wood or a bit better than 4. This class covers advanced designs and construction methods for optimizing building enclosures and the implementation of advanced framing in residential and low-rise commercial wood framed buildings. Optimizing building envelopes by reducing the framing factor leads to lower air leakages, less thermal bridging, and an effective and high R-values. Well implemented advanced framing lowers the material costs, labor, and construction waste, and ultimately leads to improved occupant comfort and smaller HVAC systems. This class covers advanced designs and construction methods for optimizing building enclosures.</p>
<b>Understanding the House as a System</b>	<p>Builders and remodelers must choose from hundreds of products and technologies. This seminar helps them understand the relationships between choices in windows, heating, air conditioning, ventilation strategies, insulation systems and indoor air quality. Attendees will learn how selecting the wrong window coating can increase energy costs, how replacing interior doors might cause a water heater to back draft deadly fumes into a home, and how poorly installed ducts can cause fireplace back drafting. They will also learn about building loads, foundations, framing, building science fundamentals, weather barriers, exterior cladding systems, windows, insulation, roof and attic systems, HVAC, electrical and plumbing systems, and interior finishes.</p>
<b>Cost Effective Methods for Sealing the Building Envelope to Reduce Thermal Bypasses and Meet the Energy Star Home Checklist Requirements</b>	<p>Energy Star Homes now require that builders complete a multi-point check list in order for new homes to carry the Energy Star label. This class offers cost effective solutions for building high performance homes. How many times have you heard the phrase "We never had these problems with homes until we started tightening homes up"? This class illustrates why tighter buildings actually perform better, last longer, and are safer to live in than the typical "accidentally ventilated" home. Steve uses pictures from the field to show problems and solutions to control the damaging effects of air infiltration/exfiltration and moisture laden air movement. Practical approaches for air sealing, reducing thermal bypasses, and cost effective insulation levels and materials are the focus of the class. Air barrier and vapor retarder selections and their proper location will also be discussed.</p>
<b>Designing, Building &amp; Retro-fitting High Performance Attics - Putting the 'Lid' on High Space Conditioning Costs</b>	<p>Attics can account for 30-40% of space conditioning costs. This class examines how to make attics energy efficient for new and retro-fit attics to reduce energy costs increase comfort and enhance durability of building components. The focus of the class is to help builders and retrofit contractors identify the most practical and effective means to reduce heat loss and heat gain in attics while avoiding moisture and ventilation problems. Steve Easley, a nationally recognized building science consultant will show real world examples of cost</p>
<b>Insulation Technologies and Installation Specs for Better Energy Performance of Commercial Buildings</b>	<p>In recent years "green buildings" have been criticized because their energy performance has not lived up to expectations of their owners. New energy codes as well as green building programs like LEED put more emphasis on energy efficiency than ever before. This class focuses on the performance characteristics of new and existing insulation technologies as well the importance of a well-designed air barrier system. This interactive class is designed to sort through the myriad of insulation choices in order to match the best insulation system to the type of structure. Energy codes for the first time are requiring specific installation protocols for insulation. This class also will</p>

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	<p>explain installation and air barrier requirements by codes in order to develop appropriate specifications to meet these new codes and create buildings that perform with better real world results. This class will help you: select the best insulation system for a given application; write better specifications regarding insulation and installation; explain how insulation works and sort fact from fiction regarding manufacturer claims; and understand the relationships between air barriers, moisture vapor transmission, condensation, material permeability, and insulation selection.</p>
<p><b>Building Science for Cost Effective Approaches to Net Zero Energy Homes</b></p>	<p>Understanding building science is critical to making smart choices for building a Net Zero Energy (NZE) home that work. The class uses real world examples to demonstrate cost effective methods to reduce energy loads. The heating and cooling loads are lowered by using cost effective building shell improvements, high-efficiency HVAC equipment, high-efficiency windows, and mechanical ventilation and lighting. Plug loads and non-HVAC energy loads will also be addressed. Steve uses field slides to illustrate cost effective solutions that lead to practical and long lasting NZE homes. The course gives builders the knowledge to build NZE homes that are durable, safe, healthy, energy efficient and comfortable to live in.</p>
<p><b>Window Selection for Existing and New Homes</b></p>	<p>On average windows make up to 15-20% of the surface area of walls in new and existing homes. Since many of these homes have single pane aluminum windows this means that the 15-20% walls are insulated to about R-1. Selecting the right windows can substantially increase comfort and reduce energy costs. Window technologies have changed considerably in recent years. These products can save up to 25% on heating costs and up to 40% on cooling costs, but using the wrong window technology in the wrong climate can increase energy costs. Sorting out all of the options and variables can be very confusing. Steve Easley uses examples for his consulting practice to illustrate how these products work and their relative value in saving energy and providing significant gains in consumer comfort as well as best installation methods.</p>
<p><b>Advanced Building Science for BPI Certified Contractors</b></p>	<p>The mantra of all BPI certified contractors is to “do no harm” and leave the home more energy efficient as well as safe to live in. Understanding building science and the physics of how heat, moisture and air flow effect building durability and indoor air quality is critical to retrofitting structures that are energy efficient, durable and healthy to live in. Steve Easley uses real world examples of building failures from his consulting practice to illustrate how the laws of nature interact with building components and influence long term house performance. This course is designed to give contractors the knowledge to identify problems that lead to premature failure house systems as well as sort out fact from fiction among the myriad manufacturer claims.</p>
<p><b>Insulation Options for New and Existing Homes</b></p>	<p>This class examines insulation technologies and installation specs for better energy performance. In recent years some "green buildings" have been criticized because their energy performance has not lived up to expectations of their owners. New energy and green codes as well as green building programs put more emphasis on energy efficiency than ever before. In this class Steve Easley focuses on the material and performance characteristics of new and existing insulation technologies as well the importance of air sealing a well-designed air barrier system. This interactive class is designed to sort through the myriad of insulation choices in order to match the best insulation system to the type of structure. Energy codes for the first time are requiring specific</p>

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<p><b>Best Practice Designs Recommendations for High Performance Building Enclosures</b></p>	<p>In recent years "green buildings" have been criticized because their energy performance has not lived up to expectations of their owners. This class focuses why buildings are unlikely to perform as expected or modeled. New energy codes, green codes and green building programs put more emphasis on energy efficiency than ever before but offer little guidance how to get there. This class focuses on the major causes of poor performance and cost effective solutions.</p> <ol style="list-style-type: none"> <li>1. Impacts of poor framing factors. Commercial structures often have framing loss factors greater than 30% due to thermal bridging.</li> <li>2. Thermal defects due to wind-washing. Inadequate air barrier design specs and poor air barrier installs can reduce the thermal performance of insulation by 50%.</li> <li>3. Thermal defects caused by defective installation of insulation. Poorly installed insulation can reduce the insulation performance by 28. Many energy codes now require insulation installed to grade level 1 or 2.</li> <li>4. Impacts of fenestration. Percentage of glazing can have huge impacts on enclosure performance. The proper fenestration choices can nearly double wall performance.</li> </ol>
<p><b>Understanding &amp; Selecting Heat Pumps for space conditioning and Water heating</b></p>	<p>Heat pump technologies have evolved greatly in efficiency and popularity in recent years.</p> <p>In this class you will learn how heat pumps work to heat and cool homes as well as domestic water heating. This class will detail proper design and installation practices as well as the common mistakes that lead to poor performance, call backs and high bills. This class will explain how heat pump efficiency is measured and how to select heat pumps for performance and comfort. If you are thinking of utilizing heat pumps this introductory class is a must attend class. Steve Easley uses pictures from real world successes and failures so you will learn how to get the most out heat pump technologies.</p>
<p><b>Exterior Insulation and building High Performance Walls Getting the Details Right</b></p>	<p>Newer energy codes often require exterior insulation to reduce thermal bridging and increase energy efficiency. This creates a number of installation challenges for windows, doors and cladding. In this class, Steve uses real world examples to show how to do exterior insulation correctly. Attendees will learn how to integrate exterior insulation with the new FMA/AAMA/WDMA 500-16 standards for flashing windows and doors. Attendees will also learn how to cost effectively build drainable and rain-screen walls systems for siding, stone and stucco cladding systems and how to ingrate claddings with exterior continuous insulation.</p>

Steve Easley - [steve@steveeasley.com](mailto:steve@steveeasley.com)

## **Testimonials**

*"During a recent North Carolina Home Builders Association Expo, I attended Steve Easley's lecture on water filtration into homes and ensuing mold or rot problems. Steve showed us how simple and thoughtless construction errors can cost builders big bucks in callbacks or in a damaged reputation. I look forward to my next opportunity to hear Steve tell builders about simple and straight-forward building techniques which each of us should know; which will enhance our reputation as quality builders and save us money."*

David L. Pressly, Jr.  
2006 President  
National Association of Home Builders

*"I have attended several seminars given by Steve, and each one has been extremely informative and helpful. I've sat through a lot of seminars when you just wished it were over, but I've never felt that way with Steve's presentations. Instead, it seems there's not enough time to hear all he has to share."*

Jenny Pippin  
Pippin Home Designs  
Cornelius, NC

*"I have never sat through a seminar where I have seen builders pay as much attention as they do in Steve's seminar. His subjects are important and we learned a great deal of useful tips."*

Dave Dudziak  
History Maker Homes

## **Speaker Evaluation Comments**

*"One of the most informative and well prepared lectures I've heard in 40 years as an architect. I will go to any lecture Mr. Easley gives."*

WoodWorks North-central

*"This speaker is the best speaker. He moves along quickly with the presentations free from personal/political agendas. He doesn't get bogged down in personal anecdotes."*

PG&E Energy Training Center, San Francisco, CA 2011

*"I thoroughly enjoyed the class. Rarely have I had such a knowledgeable speaker; not since grad school. This was a welcome change to our often content shallow meetings!!!"*

Texas Association of Builders

*"Bringing design and construction execution problems into the conversation was excellent. Well done!"*

21st Century Building Expo & Conference

*"Steve is very knowledgeable about current building construction; good theoretical knowledge and a great teacher."*

Boston Society of Architects/AIA's Residential Design & Construction

*"Mr. Easley is most professional. Please bring Steve back. He is clear, direct to the point and super lecturer. Our team has learned a great deal. He goes over theory, application, case study, material and lessons-learned tips. It was worth the 6 hour (240 mile) trip. PG&E and Mr. Easley are doing great public service and leading the energy field."*

PG&E Energy Training Center, San Jose, CA 2010