

St. Louis River Room

Houses That Work™

A full day of building science for high performance homes.

In this full-day session, participants learn about complex changes in home design, building materials, mechanical systems, appliances, code compliance and consumer lifestyles and expectations that make every builder, supplier, and trade contractor's job more demanding. EEBA will cover the basics of building science and how it is applied to create high performance homes. The session will address critical home performance elements that exist as a system and are part of energy-efficient homes. The fundamentals of building science—air, heat and moisture flow—will be outlined and applied to help participants make better choices with respect to construction materials and methods. Participants will also learn about indoor air quality, including the basics of mold and other pollutant sources, and cost-effective strategies to be able to offer healthier indoor environments.

At the end of the session, attendees will have a thorough understanding of how to build better attics, walls and foundations, and how to choose HVAC systems that integrate properly into their homes. This session will also cover how building science principles improve the marketing position for building professionals, providing case studies of builders who have changed their building processes and gained return through communicating the value of high performance homes.

Presented by



Justin Wilson

Vice President, Construction Instruction, Inc.

Justin works with national and regional builders on new construction of residential and commercial buildings and forensic investigations on building sites all over North America to find solutions to problems in the building processes that affect energy, comfort, and durability. He also uses this insight to work with leading building product manufacturers on new product development, product refinements, installation and maintenance guidelines.

Thermal enclosure improvements, indoor air quality, occupant comfort, HVAC integration and design of homes are his primary industry interests. He also has a passion for affordable net zero energy homes with advanced and durable thermal enclosures. As the Environment & Sustainability Manager with McStain Neighborhoods in Boulder, Col., Justin was a key player in designing and developing several of the first production net zero homes in the U.S. He knows about the good, the bad and the ugly of production net zero building.

Justin's Bachelor of Science Degree is in music. He is an accomplished jazz and classical musician who one time played Paul Creston's Concertino for Marimba and Orchestra solo to a live audience at full tilt. Turns out, Justin's love for music is only love; his passion lies in the building industry, which he discovered while swinging a hammer to make ends meet. Since then, he's studied mechanical engineering and physics, and has since worked as an engineer at a plastic component manufacturing facility.

These days, the Construction Instruction mobile app is Justin's main part-time job and one of his proudest achievements. It thrills him to watch the user base keep growing and it is rewarding to know that people are gaining valuable and innovative industry knowledge through the app.

Tuesday, February 23

Please see the following pages for detailed course descriptions.

6:30–7:00 am • Early Session Registration

Complete seven hours of your MN Builder CEU requirements per day (pending approval from the Minnesota Department of Labor and Industry). You must attend the 7:00 a.m. session to receive all seven credits.

	Gooseberry	Harborside 203	Harborside 302	French River	Harborside 304
	Commercial Applications	Solar	Mechanical Systems	Codes and Standards	Building Science—High Performance Housing—EEBA Houses That Work™
7:00–8:15 am	<p>Panel Discussion: Opportunities for Improving the Efficiency and Operation of Building Ventilation</p> <p><i>Mark Garofano, Minnesota Department of Commerce, Division of Energy Resources; Josh Quinnell, Center for Energy and Environment; Scott Hackel, Seventhwave; Amalia Hicks, Sustainable Engineering Group</i></p>	<p>An Introduction to the Form and Function of Solar Energy in Cold Climates</p> <p><i>Jason Edens, Rural Renewable Energy Alliance</i></p>		<p>Air Flow Measurements</p> <p><i>Paul Morin, The Energy Conservatory</i></p>	
7:30–8:30 am • Registration • Exhibit Hall Opens					
8:30–10:00 am	<p>Using an Aerosol Sealant to Reduce Multifamily Envelope Leakage</p> <p><i>David Bohac, Center for Energy and Environment</i></p>	<p>The Three P's of Solar: Policies, Products, and Possibilities</p> <p><i>Stacy Miller, Minnesota Department of Commerce, Division of Energy Resources; and Paul Helstrom, Minnesota Power</i></p>	<p>Real Life Experience: Energy Storage, Living Off the Grid, and What That Actually Means</p> <p><i>Christopher LaForge, Great Northern Solar</i></p>	<p>Trials and Tribulations of Energy Code Testing</p> <p><i>Ross Anderson, Neighborhood Energy Connection</i></p>	<p>Houses That Work: Remodeling for Energy Efficiency (Part 1 of 4)</p> <p><i>Andy Oding, Construction Instruction Inc.</i></p>
10:00–10:30 am • Break • Exhibits					
10:30 am–12:00 pm	<p>Using Asset Management Tools to Design, Implement and Monitor Energy-Efficiency Improvements</p> <p><i>Michael LeBeau and Nancy Schultz, CR Building Performance Specialists</i></p>	<p>Solar Ready Construction</p> <p><i>Jack Kluempke, Minnesota Department of Commerce, Division of Energy Resources; Doug Manthey, Conservation Technologies</i></p>	<p>Radon: What We Have Learned From Retrofit Studies</p> <p><i>Stacy Gloss, Indoor Climate Research & Training, University of Illinois</i></p>	<p>Human Thermal Comfort: Dialing it in with ASHRAE 55</p> <p><i>Rana Belshe, Conservation Connection Consulting</i></p>	<p>Houses That Work: Remodeling for Energy Efficiency (Part 2 of 4)</p> <p><i>Andy Oding, Construction Instruction Inc.</i></p>
12:00–1:00 pm • Lunch • Exhibits					
1:00–2:30 pm	<p>Energy Savings From Air Sealing Commercial Buildings</p> <p><i>David Bohac, Center for Energy and Environment</i></p>	<p>Understanding the Changing Renewable Energy (RE) Market: New Designs, New Products and How They Affect the Energy Landscape</p> <p><i>Christopher LaForge, Great Northern Solar</i></p>	<p>Ground Source Heat Pumps (GSHP) Economics: How the Numbers Really Work</p> <p><i>Mark Sakry, Northern GroundSource Inc.</i></p>	<p>Achieving Compliance With New Residential Energy Codes</p> <p><i>Alison Lindburg, Fresh Energy; Tim Manz, City of Blaine</i></p>	<p>Houses That Work: Remodeling for Energy Efficiency (Part 3 of 4)</p> <p><i>Andy Oding, Construction Instruction Inc.</i></p>
2:30–3:00 pm • Break • Exhibits					
3:00–4:30 pm	<p>Lighting Design: It's Not All or Nothing</p> <p><i>Jay Marshall, ON2 Solutions</i></p>	<p>Solar for New and Existing Buildings, Guidance for Contractors</p> <p><i>Rebecca Lundberg and Dan Williams, Powerfully Green</i></p>	<p>Combustion Safety: Data vs. Dogma and the Evolution of New Standards</p> <p><i>Stacy Gloss, Indoor Climate Research & Training, University of Illinois; David Bohac, Center for Energy and Environment; Dan Cautley, Seventhwave</i></p>	<p>Commercial Energy Codes Support Program</p> <p><i>Megan Hoye and Russ Landry, Center for Energy and Environment</i></p>	<p>Houses That Work: Remodeling for Energy Efficiency (Part 4 of 4)</p> <p><i>Andy Oding, Construction Instruction Inc.</i></p>

4:30–6:00 pm • Reception • Door Prizes • Refreshments • Exhibits

Wednesday, February 24

Please see the following pages for detailed course descriptions.

6:30–7:00 am • Early Session Registration

Complete seven hours of your MN Builder CEU requirements per day (pending approval from the Minnesota Department of Labor and Industry). You must attend the 7:00 a.m. session to receive all seven credits.

French River	Harborside 302	Harborside 304	Gooseberry	Harborside 203	
Pathways for Low-Energy Homes	Materials and Methods	Tools of the Trade	Existing Homes	System Design Time	7:00–8:15 am
New Passive House Standards! How PHIUS+2015 Makes Passive House Viable in Very Cold Climates <i>Michael LeBeau, CR Building Performance Specialists; Katrin Klingenberg, Passive House Institute US</i>			Making Your Measurements Accurate and Repeatable <i>Paul Morin, The Energy Conservatory</i>	Saving Energy in Existing Multifamily Buildings <i>Corrie Bastian, Center for Energy and Environment</i>	

7:30–8:30 am • Registration • Exhibit Hall Opens

Introduction to Passive House <i>Joshua VandeBerg, Western Technical College</i>	From Control Layers to High-Performance Enclosures <i>Patrick Huelman, University of Minnesota</i>	Home Performance Business Models: Understanding the Opportunities and Marketing Power of the Whole-House Approach <i>Peter Troast, Energy Circle; Paul Morin, The Energy Conservatory</i>	Beyond Diagnostic Testing: An Interpretation of Home Performance <i>Tessa Murry, Structure Tech</i>	Duct Leakage and Retrofit Duct Sealing in Minnesota Commercial and Institutional Buildings <i>Josh Quinnell, Center for Energy and Environment</i>	8:30–10:00 am
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10:00–10:30 am • Break • Exhibits

Residential Passive House Retrofit (EnerPHit) Case Study Combination <i>Tim Eian, TE Studio, Ltd.</i>	Banging My Head Against the (High Performance) Wall <i>Rachel Wagner, Wagner Zaun Architecture</i>	Paying for Energy Improvements <i>Eric Rehm, Minnesota Department of Commerce, Division of Energy Resources; Pete Klein, SPPA; Cal Greening, MHFA; Jim Hasnik, CEE</i>	Research Update: Residential Condensing Boiler Optimization <i>Rebecca Olson, The Neighborhood Energy Connection; Ben Schoenbauer, Center for Energy and Environment</i>	Lighting Design: It's Not All or Nothing <i>Jay Marshall, ON2 Solutions</i>	10:30 am–12:00 pm
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12:00–1:00 pm • Lunch • Exhibits

Perspectives on the Zero Energy Home <i>Patrick Huelman, University of Minnesota; Laurel Johnston and Collin Coltman, University of Minnesota Team Opti-MN; Brian Wimmer, Rochester Area Habitat for Humanity</i>	Recommended Window Installation <i>Erick Filby and Eric Klein, Marvin Windows and Doors</i>	Marketing for Builders and Remodelers: How to Make Your Website Perform <i>Peter Troast, Energy Circle</i>	Energy Fit Homes—A Tool to Transform the Market for Energy Efficiency in Existing Homes <i>Isaac Smith, Center for Energy and Environment; Rebecca Olson, The Neighborhood Energy Connection</i>	EV Charging for Multi-Housing and Commercial Properties <i>Jukka Kukkonen, PlugInConnect, LLC</i>	1:00–2:30 pm
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2:30–3:00 pm • Break • Exhibits

Lessons from the Deep Energy Retrofit Frontlines <i>Andrew Webster, Coldham & Hartman Architects</i>	High Performance Glazing for Better Buildings <i>Aynsley and Al Dueck, DUXTON Windows & Doors</i>	Builder 2.0: Training and Educating the Next Generation of Construction Professionals <i>Josh VandeBerg, Western Technical College</i>	Emerging Technologies for Cold Weather Residential Heating <i>Josh Quinnell and Nicole Kessler, Center for Energy and Environment</i>	Passive House for Commercial Projects in Cold Climates <i>Tim Eian, TE Studio.Ltd.</i>	3:00–4:30 pm
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