

Harborside 203

PV 101 Basic Photovoltaics: An Overview of Solar Electric Systems

Are you interested in building solar energy into your business but not sure where to start? This daylong course is the perfect starting point to give you a competitive edge with the increasing demand for solar energy.

This 8-hour course uses a combination of lecture and classroom activities to teach the basics of photovoltaic (PV) systems. Participants will learn how PV systems work, diagram the four PV system types, describe and identify components, understand the best application and limitations of each system type, define the solar window, make energy-efficiency recommendations, estimate system loads and understand the basics of PV site assessment.

Presented by Julie Brazeau, Midwest Renewable Energy Association

\$150 separate registration fee for this preconference track (includes lunch)

8:00 am–4:30 pm

Harborside 204

Building and Selling the Zero Energy Ready Home

A Department of Energy (DOE) Zero Energy Ready Home is a high performance home which is so energy efficient that a renewable energy system can offset all or most of its annual energy consumption.

Since 2008, the U.S. Department of Energy Builders Challenge program has recognized hundreds of leading builders for their achievements in energy efficiency—resulting in over 14,000 energy-efficient homes and millions of dollars in energy savings. The DOE Zero Energy Ready Home—formerly DOE Challenge Home—represents a new level of home performance with rigorous requirements that ensure outstanding levels of energy savings, comfort, health and durability.

This full-day workshop will focus on what a builder needs to know to successfully design, construct, and market the Zero Energy Ready Home.

Note: This session will meet the mandatory builder and rater orientation requirement to participate in the DOE Zero Energy Ready Home program.

Presented by Sam Rashkin, R.A., Chief Architect for the Department of Energy's Building Technologies Office

\$150 separate registration fee for this preconference track (includes lunch)

8:00 am–4:30 pm



Gooseberry

Existing Asset Optimization for Commercial Buildings

Join us for this full-day training designed to help you optimize the energy efficiency of your commercial facility. This day will include:

Advanced RTU Control Strategies

Presented by Ryan Hoger, Director of Corporate Training at Temperature Equipment Corporation

- This session will explain the RTU related requirements of the International Energy Conservation Code (IECC)
- You will learn the appropriate RTU accessories to maximize performance and efficiency
- An overview will be provided on technologies such as economizers, demand controlled ventilation and energy recovery ventilation
- We will explore the newest energy-saving RTU options of multi-speed fan controls

Steam to Hot Water Conversion

Presented by Joe Mozeika, Technical Applications Specialist, Mulcahy Company

All aspects of the steam conversion process will be covered, including:

- Efficiency gains when using hot water vs. steam
- Piping considerations
- Reduction in chemical costs
- Basic control strategies for modern high efficiency hot water boilers

Facility Optimization via Energy Management Systems

Presented by Tom Tainter, Optimization Services Manager, ICS Consulting, Inc.

Learn how to get the most out of your control system. As a result of this session, participants will:

- Understand the importance of Energy Management Systems (EMS)
- Gain a better understanding of optimization opportunities within their facilities
- Understand the differences in costing and the range of optimization opportunities
- Understand the importance of complete and accurate commissioning after the installation of energy-efficient systems

\$150 separate registration fee for this preconference track (includes lunch)

8:00 am – 4:30 pm

Join us for the Monday evening welcome reception!

Join us at the DECC for complimentary refreshments, music and networking. 4:30 pm to 7:00 pm in the French River room.



Tuesday, 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 credit 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.

	Harborside 302	Harborside 204	Gooseberry	French River	Harborside 203
7:00–8:15 am	Great Balls of Fire (Solar)	Our House (High Performance Housing)	Home on the Range (Materials and Methods)	Taking Care of Business (The Business of Energy Efficiency)	Building Science—High Performance Housing—EEBA Houses That Work™
	Solar 101 <i>Jason Edens, Rural Renewable Energy Alliance</i>	Lead Safe <i>Bob Rogalla and Bob Massey, Lake States Environmental, Ltd.</i>	Cantilevered Floor Research – Comfort and Moisture Findings at 6 months <i>Dick Stone, Sawtooth Ridge Woodcraft</i>		

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

8:30–10:00 am	Planning for Solar: Building Solar Ready <i>Jack Kluempke, Minnesota Department of Commerce; Doug Manthey, Conservation Technologies</i>	Getting to Net Zero: Setting and Achieving Goals with an Integrative Process <i>Rick Carter and Becky Alexander, LHB</i>	Low-Cost Construction for High Energy Savings <i>Brian Wimmer, Rochester Area Habitat for Humanity</i>	Paying for Energy Improvements: The Next Step <i>Alex Cecchini, Minnesota Department of Commerce (Panel Discussion)</i>	Houses that Work: A Full-Day Building Science Course on New Construction (Part 1 of 4) <i>Justin Wilson, Construction Instruction Inc.</i>
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10:00–10:30 am • Break • Exhibits

10:30 am–12:00 pm	Solar Electric System Design <i>Chris LaForge, Great Northern Solar</i>	Are You Ready for the DOE Zero Energy Ready Home? <i>Pat Huelman, University of Minnesota Extension</i>	Blower Door Testing of Multifamily Buildings <i>Paul Morin, The Energy Conservatory</i>	Get Results With Your Energy Work: Engage People Effectively <i>Alexis Troschinetz, Clean Energy Resource Teams</i>	Houses that Work: A Full-Day Building Science Course on New Construction (Part 2 of 4) <i>Justin Wilson, Construction Instruction Inc.</i>
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12:00–1:00 pm • Keynote Lunch with Sam Rashkin (served in Ballroom O) • Exhibits

1:00–2:30 pm	2014 National Electrical Code (NEC) Update for Photovoltaic Systems <i>Julie Brazeau, Midwest Renewable Energy Association</i>	High Performance, Low Energy Details in the Field (Part 1 of 2) <i>Rachel Wagner, Wagner Zaun Architecture</i>	Foundation Wall Insulation Retrofit—Excavationless <i>Rolf Jacobson, University of Minnesota; Steve Schirber, Cocoon</i>	Buying and Selling Energy Efficiency <i>Chad Smith, Residential Science Resources</i>	Houses that Work: A Full-Day Building Science Course on New Construction (Part 3 of 4) <i>Justin Wilson, Construction Instruction Inc.</i>
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2:30–3:00 pm • Break • Exhibits

3:00–4:30 pm	Selling Solar in the Current Market <i>Chris LaForge, Great Northern Solar</i>	High Performance, Low Energy Details in the Field (Part 2 of 2) <i>Rachel Wagner, Wagner Zaun Architecture</i>		Growing Efficiency with the Seeds of Conservation: Applied Research and Development <i>Jessica Burdette, Minnesota Department of Commerce, Division of Energy Resources (Panel Discussion)</i>	Houses that Work: A Full-Day Building Science Course on New Construction (Part 4 of 4) <i>Justin Wilson, Construction Instruction Inc.</i>
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4:30–6:00 pm • Reception • Door Prizes • Refreshments • Exhibits

Wednesday, February 25

Please see the following pages for detailed course descriptions.

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

Complete seven hours of your MN Builder credit 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.

Harborside 204	Harborside 304	Harborside 302	French River	Harborside 203	7:00–8:15 am
The Times They Are A' Changing (Updates on Codes)	Home Sweet Home (Mechanical Systems)	Living in a Material World (Materials and Methods)	Homeward Bound (Case Studies)	Building Science—High Performance Housing—EEBA Houses That Work™	
Asbestos: Yes It's Still Around	Energy-Efficiency Options for Residential Water Heating	Cantilevered Floor Research – Comfort and Moisture Findings at 6 months			
<i>Bob Rogalla and Bob Massey, Lake States Environmental, Ltd.</i>	<i>Dave Bohac, Center for Energy and Environment</i>	<i>Dick Stone, Sawtooth Ridge Woodcraft</i>			

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

An In-Depth Look at Insulation, Air Sealing and Testing for the New Minnesota Energy Code	Heat Recovery Ventilation: Meeting ASHRAE 62.2	Recommended Clad Wood Window Installation Technologies	Home Performance Diagnostics: Extreme Peeling Paint Case Study	Insulation & Air Sealing: High Performance Walls and Exterior Insulation (Part 1 of 2)	8:30–10:00 am
<i>Ross Anderson, Cocoon</i>	<i>Barry Stephens, Zehnder America, Inc.</i>	<i>Erick Filby and Eric Klein, Marvin Windows</i>	<i>Sam Greene, Residential Science Resources</i>	<i>Andrew Oding, Building Knowledge Canada</i>	

10:00–10:30 am • Break • Exhibits

How the Energy Code Will Affect the HVAC Trade	Saving Energy in Existing Multifamily Buildings	Lighting Optimization	When Building Codes Aren't Followed	Insulation & Air Sealing: High Performance Walls and Exterior Insulation (Part 2 of 2)	10:30 am–12:00 pm
<i>Mike Wilson, Dakota Supply Group</i>	<i>Corrie Bastian, Center for Energy and Environment</i>	<i>Jay Marshall, ON2 Solutions</i>	<i>Andy Thielen, Crane Engineering</i>	<i>Andrew Oding, Building Knowledge Canada</i>	

12:00–1:00 pm • Lunch (served in Ballroom O) • Exhibits

New Minnesota Energy Code, HERS Rating and Green Certification	Modern Hydronic Designs, Controls and Condensing Boilers (Commercial)	Of Building Science, Control Layers, and High Performance Enclosures	Solar Energy for Affordable Housing and Low-Income Energy Programs	Cost-Effective HVAC for the High Performance Home	1:00–2:30 pm
<i>Sam Greene, Residential Science Resources</i>	<i>Matthew Kiemen, Ryan Company Inc.</i>	<i>Pat Huelman, University of Minnesota Extension</i>	<i>Jason Edens, Rural Renewable Energy Alliance</i>	<i>Andrew Oding, Building Knowledge Canada</i>	

2:30–3:00 pm • Break • Exhibits

Implementation of the New Energy Code	Duct/Ductless Mini Split Heating and Cooling Application and Case Study	Low-Cost Construction for High Energy Savings	The Root River House: Net Zero Project in a Cold Climate	Sales: Extracting the True Value Out of High Performance, Energy-Efficient Homes	3:00–4:30 pm
<i>Paul Morin, The Energy Conservatory</i>	<i>Mike Wilson, Dakota Supply Group</i>	<i>Brian Wimmer, Rochester Area Habitat for Humanity</i>	<i>Christi Weber, Design Coalition Architects</i>	<i>Andrew Oding, Building Knowledge Canada</i>	