Tuesday, February 22

Complete seven hours of CEU requirements per day. **You must attend the 7:00 a.m. session to receive all seven credits.** Check the *Credits & Designations* webpage for up-to-date information about credits.

	Emerging Technologies	Healthy Homes		Heat Pumps & Efficiency		EEBA Mechanicals		
	French River Room	Ballroom O/N		Ballroom L/M		Ballroom J		
7:00-8:15 am		Asbestos - Yes, It's Still Around! Bob Rogalla, Lake States Environmental, Ltd.		Cold Climate Air Source Heat Pumps: A Primer and Launch Pad Rabi Vandergon and Peter Gephart, MN ASHP Collaborative				
		7:30–8:30 am • Registration Check-In						
8:30-10:00 am	Hydronics for Low Energy & Net Zero Homes, Part 1* John Siegenthaler, Appropriate	Improving Residential HVAC Performance and Energy Efficiency Jake McAlpine, The Energy		Energy Efficiency, Sustainability, and Climate Action in the City of Duluth Mindy Granley, Mike LeBeau and		EEBA: High Performance Mechanical Systems for Houses That Work, Part 1* Andrew Oding, EEBA		
8:30-	Designs	Conservatory, and Bruce Stahlberg, Affordable Energy Solutions, Inc.		Alex Jackson, City of Duluth		Andrew Oding, LLBA		
		Solutions, Inc. 10:00–10:30 am • Break Air Management for High- 4-Part Heat Pump Design						
10:30 am -12:00 pm	Hydronics for Low Energy & Net Zero Homes, Part 2* John Siegenthaler, Appropriate Designs	Air Management for High- Performance, Low-Load Homes Patrick Huelman, University of Minnesota		4-Part Heat Pump Design Process, Part 1 of 2* Jonathan Moscatello, Daikin		EEBA: High Performance Mechanical Systems for Houses That Work, Part 2* Andrew Oding, EEBA		
		12:00-1:00	0 pr	m • Lunch				
1:00-2:30 pm	Hydronics for Low Energy & Net Zero Homes, Part 3* John Siegenthaler, Appropriate Designs	Observing Building Enclosures Leaking; Heat, Air and Water Using Infrared Thermography Scott Wood, VaproShield		4-Part Heat Pump Design Process, Part 2 of 2* Jonathan Moscatello, Daikin		EEBA: High Performance Mechanical Systems for Houses That Work, Part 3* Andrew Oding, EEBA		
		2:30–3:00 pm • Break						
3:00-4:30 pm	Electric Vehicles and Charging Infrastructure: Why and How? Jukka Kukkonen, Shift2Electric	Healthy Air in Every Home We Build: Managing Humidity, Air Purity and Ventilation Joseph Hillenmeyer and Chris Howells, Aprilaire		Tips for Operational Readiness Jonathan Moscatello, Daikin		EEBA: High Performance Mechanical Systems for Houses That Work, Part 4* Andrew Oding, EEBA		

^{*}You must attend each part of this course in order to receive CEUs; partial credit cannot be given.

Wednesday, February 23

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	Envelope	Sustainable Practices	Heat Pumps & Decarbonization	EEBA High Performance
	French River Room	Ballroom O/N	Ballroom L/M	Ballroom J
7:00-8:15 am	Designing Foam-Free Passive House Assemblies in Climate Zone 6 & 7 Floris Keverling Buisman and Enrico Boniauri, 475 High Performance Building Supply	Lead-Safe Methods for Remodeling, Repair and Painting Activities Bob Rogalla and Nate Cox, Lake States Environmental, Ltd.		
		7:30-8:30 am • Re	nistration Check-In	
8:30-10:00 am	From Control Layers to Robust, High-Performance Enclosures Patrick Huelman, University of Minnesota	Solar + Energy Storage - Don't Miss the Clean Energy Wave! Christopher LaForge, Great Northern Solar	Top 10 Cold Climate Heat Pump Installation Fails Jonathan Moscatello, Daikin	EEBA: Houses That Work, Part 1* Andrew Oding, EEBA
		10:00-10:30		
10:30 am-12:00 pm	High Performance Window Installation Erick Filby and Eric Klein, Marvin Windows and Doors	Passive House & Code, ASHRAE and other Green Building Standards Tim Eian, TE Studio, Ltd.	Strategies for Heat Pump Adoption at the Time of Air Conditioning Replacement Emily McPherson and Ben Schoenbauer, MN ASHP Collaborative	EEBA: Houses That Work, Part 2* Andrew Oding, EEBA
1:00-2:30 pm	The Benefits of Rainscreen Design Scott Wood, VaproShield	The 2000-Watt Society and Passive House Tim Eian, TE Studio, Ltd.	Connecting with Air Source Heat Pump Customers Alexis Troschinetz, Clean Energy Resource Teams	EEBA: Houses That Work, Part 3* Andrew Oding , EEBA
П		n • Break		
3:00-4:30 pm	An Update on Project Overcoat: Wall Insulation Upgrade Testing at CRRF Garrett Mosiman, University of Minnesota	Is it Really All About Energy? Brian Wimmer, Franklin Energy, LLC	Decarbonizing Fuel-Fired Equipment in Buildings Jason LaFleur, GTI Energy	EEBA: Houses That Work, Part 4* Andrew Oding, EEBA

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Please note: this agenda is subject to change on short notice due to the evolving Covid-19 pandemic.