



Race to Zero

DOE Challenge Home Student Design Competition Awards:

April 26 - 28, 2014

National Renewable Energy Laboratory - Research Support Facility, Golden, Colorado

UPDATED: April 18, 2014

28 teams from U.S. and Canadian universities are competing to develop cost-effective zero energy ready homes for mainstream builders. Over the next three days, these teams will present their designs, thought leaders will discuss the future of housing, competition awards will be announced, and the latest innovations that will transform housing will be presented.

Time	April 26 Agenda			
11:00 – 11:30	Check-in each day at Education Center			
11:30 – 12:15	Lunch in Cafeteria			
12:15-1:00	Welcome: Thomas Kenney, VP Engineering and Research, Housing Innovation Research Laboratory Chuck Kutscher, Director of Buildings and Thermal Systems, National Renewable Energy Laboratory			
	University Team Juror Presentations (25 min presentation, 15 min Q&A)			
	San Juan A:	San Juan B:	San Juan C:	Beaver Creek C:
1:20 – 2:00	<i>Team Blue –</i> Pennsylvania College of Technology	<i>MIDC Orange –</i> Auburn University College of Architecture Design and Construction	<i>ThresholdHouse –</i> Ryerson University	<i>LSC- Architectural Technology –</i> Lake Superior College
2:10 – 2:50	<i>Any Orientation House -</i> University of Colorado Denver	<i>Bulldog Builders -</i> California State University Fresno	<i>University of Toronto -</i> University of Toronto <i>(via Webinar)</i>	<i>Lawrence Point Rowhouse –</i> University of Colorado Denver
3:00 - 3:40	<i>University of Wyoming Architectural Engineering -</i> University of Wyoming	<i>Utah Lab House -</i> University of Utah, School of Architecture	<i>Team Gray - Pennsylvania</i> College of Technology	<i>Cal Poly SLO 1 - California</i> Polytechnic State University
3:50 - 4:30	<i>Rutgers –</i> Rutgers University <i>(via Webinar)</i>	<i>Nittany Lions E-den -</i> Pennsylvania State University	<i>The IIT Crowd –</i> Illinois Institute of Technology <i>(via Webinar)</i>	<i>Illinois State University -</i> Illinois State University
4:30 – 6:30	Networking Reception/Student Entry Poster Exhibit in Beaver Creek A and B			



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Time	April 27 Agenda			
7:30 – 8:00	Check-in each day at Education Center			
8:00 – 8:45	Breakfast in Cafeteria			
8:15 – 8:45	Welcome: Sam Rashkin, Chief Architect, Building Technologies Office, U.S. Department of Energy			
8:45 – 9:00	Group Photo			
	University Team Presentations to Jurors (25 min presentation, 15 min Q&A)			
	San Juan A:	San Juan B:	San Juan C:	Beaver Creek C:
9:20 – 10:00	<i>Clemson DOE Challenge Homes Competition - Clemson University</i>	<i>Panther Innovations - University of Pittsburgh</i>	<i>Team UIUC – University of Illinois at Urbana-Champaign</i>	<i>Team Mojave – University of Nevada Las Vegas</i>
10:10 – 10:50	<i>Opti-MN - University of Minnesota</i>	<i>KU0609 – Kansas University (via Webinar)</i>	<i>Urban Harvest – Ryerson University</i>	<i>Montage Builders Northern Forest - SUNY ESF, Syracuse University, Onondaga Community College</i>
11:00 - 11:40	<i>gt.5 – Georgia Institute of Technology</i>	<i>Project Zero – Roger Williams University</i>	<i>UMass Lowell Design - University of Massachusetts Lowell</i>	<i>MIDC Blue – Auburn University College of Architecture Design and Construction</i>
11:50 – 12:50	Lunch in Cafeteria			
	Thought-Leaders Vision for Housing in San Juan A, B and C			
1:00 – 1:40	The Perfect Enclosure Joseph Lstiburek, Building Science Corporation			
1:40 – 2:20	The Journey to Green Ron Jones, Green Builder Media			
2:20 – 2:30	Break			
2:30 – 3:10	The Future Today: Constructing Production Zero Energy Home Gene Myers, New Town Homes			
3:10 – 3:50	Integrating Great Design and Development with Zero Energy Ready John McLinden, StreetScape Development, LLC			
3:50 – 4:30	12 Trends that Define the Visible Future for Housing Sam Rashkin, U.S. Department of Energy			
4:30 – 6:30	Networking Reception/Student Entry Poster Exhibit in Beaver Creek A and B			
6:30 – 8:00	Awards Dinner in Cafeteria			
8:30	Off Campus			



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Building America serves as the hub of innovation for high-performance new and existing homes. This includes 10 contract teams and 4 national laboratories creating an impressive pipeline of advanced technologies, best practices, whole-house demonstrations, guidance and infrastructure solutions. Each year, Building America teams and labs propose the best of their work for consideration as top innovations that will transform how we build and upgrade homes in the U.S. Short presentations will highlight examples that serve as a path to zero energy new and existing homes in the U.S.

Time	April 28 Agenda		
7:30 – 8:00	Check-in each day at Education Center		
8:00 – 8:30	Breakfast in San Juan Conference Rooms		
8:30 – 8:50	Building America Overview Eric Werling, Building America Coordinator, U.S. Department of Energy		
	Innovation Speed Dating Session Rapid Fire Building America 2014 Top Innovations Preview (7 min presentation, 3 min Q & A)		
	Beaver Creek A	Beaver Creek B	Beaver Creek C
	High-R Roofs/Foundations	HVAC Part I	Deep Energy Retrofits
9:00 – 9:10	<i>Unvented Roof Assemblies Without Spray Foam</i> Building Science Corporation	<i>HVAC Design Guides</i> IBACOS	<i>Phased Deep Energy Retrofit Demonstration</i> Florida Solar Energy Center
9:10 – 9:20	<i>Electronic Foundation Design Handbook</i> Oak Ridge National Lab	<i>Flex Duct Junction Box Best Practices</i> IBACOS	<i>Single Family Home Deep Energy Retrofits</i> Davis Energy Group
9:20 – 9:30	<i>Excavationless Exterior Foundation Field Study</i> University of Minnesota	<i>Variable Capacity HVAC Systems Interactions</i> Florida Solar Energy Center	<i>Mineral Fiber High Performance Enclosure Retrofit</i> Building Science Corporation
9:30 – 9:45	Break		
	High-R Walls	HVAC Part II	Multi-Family Housing
9:45 – 9:55	<i>Cladding Attachment Over Continuous Exterior Insulation</i> Building Science Corporation	<i>Energy Use Consequences of High-MERV Filters</i> Davis Energy Group	<i>Model Specifications for Low-Income Multi-Family Projects</i> IBACOS
9:55 – 10:05	<i>Continuous Wall Insulation for Existing Homes</i> Home Innovation Research Lab	<i>Raised Ceiling Interior Duct System Implementation</i> Florida Solar Energy Center	<i>Retrofitting Multifamily Buildings</i> Gas Technology Institute
10:05 – 10:15	<i>Spray foam Exterior Insulation with Stand-Off Furring</i> IBACOS	<i>Residential Pre-Cooling</i> Davis Energy Group	<i>Hydronic Heating Retrofits for Low-Rise Multi-Family Housing</i> The Levy Partnership
10:15 – 10:30	Break		
	Affordable Housing	Advanced Water Heating	Whole-House Ventilation
10:30 – 10:40	<i>Cost-Optimized Roof Solution for Factory-Built Homes</i> The Levy Partnership	<i>Proper Water Heater Selection</i> Davis Energy Group	<i>Selecting Ventilation Systems for Existing Homes</i> Steven Winters Associates
10:40 – 10:50	<i>Retrofit Best Practices for Hot-Humid Affordable Housing</i> Florida Solar Energy Center	<i>Heat Pump Water Heaters for Central Multi-Family Housing</i> Davis Energy Group	<i>ASHRAE Standard 62.2</i> Lawrence Berkeley National Lab
10:50 – 11:00	<i>St. Bernard Project Perf. Eval. and Opportunity Assessment</i> IBACOS	<i>Heat Pump Water Heaters in New and Existing Homes</i> Steven Winters Associates	<i>Smart Ventilation Controls</i> Lawrence Berkeley National Lab

11:00 – 11:15	Break		
	Zero Energy Ready Homes	Diagnostics/Simulations	Guidance
11:15 – 11:25	<i>Zero Energy Ready Single Family Homes</i> Steven Winters Associates	BEopt Automated Residential Simulation Test Suite National Renewable Energy Lab	<i>High-Performance Residential Lighting Strategy Guideline</i> IBACOS
11:25 – 11:35	<i>High-Performance Manufactured Home Prototype</i> Florida Solar Energy Center	<i>Delta-Q Duct Leakage Test</i> Lawrence Berkeley National Lab	<i>Solution Center Mobile Applications</i> Pacific Northwest National Lab
11:35 – 11:45	<i>Production Builder Passive House Occupied Test Home</i> IBACOS	<i>Resolving Codes and Standards Barriers to Innovations</i> Pacific Northwest Energy Lab	<i>Efficiency in Appraisal Processes</i> Building America Research Alliance
11:45 – 12:30	Lunch in San Juan Conference Rooms		
12:00 – 12:30	Wrap –Up/Close of Race to Zero Event Sam Rashkin, Chief Architect Building Technologies Office		