

Final 4th RBDCC Program

Tuesday, February 27

4:00pm - 5:30pm	3D Printing Concrete Robot & Building Enclosures Research Lab (BCERL) Tour (optional)
5:30pm - 7:30pm	Research & Education Night Reception @ Hintz Alumni Center (optional)

Wednesday, February 28

8:30am - 10:15am	Keynote Presentation German Residential Construction: What Can We Learn From It? <i>Opening Remarks: Dr. George Lesieutre & Prof. Kevin Parfitt</i> <i>Prof. Dr-Ing. Bohumil Kasal, Director of the Fraunhofer Institute for Wood Research, Fraunhofer Wilhelm-Klauditz-Institut, Germany</i>
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10:15am - 10:45am	Break
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10:45am - 12:15pm Conference Sessions

TRACK 1	TRACK 2	TRACK 3	TRACK 4
SESSION 1: Design Considerations: Small Homes	SESSION 2 : Building Enclosures	SESSION 3: Design Considerations: Development	SESSION 4: Building Science Education
<p>The Big Picture on Tiny Houses <i>Matthew Lutz Norwich University School of Architect & Art</i></p> <p>Concept Paper: MODs - Next Generation Mobile Housing <i>Anthony Jellen Dawood Engineering</i></p>	<p>Stucco System Performance: A Review of Reported Data and Code and Standard Development <i>Theresa Weston Dupont</i></p> <p>Comparison of Measured Hygrothermal Performance of Wood Frame Walls Built with Continuous Exterior Insulation versus Walls Built with Housewrap and OSB Sheathing in Single Family Homes in a Cold Climate <i>Greg Stewart DOW</i></p> <p>A Scientific Approach to Understanding the Safety Features of Roofing Underlayments <i>John Johnston & William Coulter Dupont</i></p>	<p>The in Between: Between Custom Residential + Developer Housing <i>Alistair Dearie & Brian Grieb Grid architects & Morgan State University</i></p> <p>IRC and IBC Provisional Requirements for Different Scale Residential Building Products <i>Ryan Solnosky Penn State</i></p> <p>Residential Building Lifespan and Community Resilience <i>Alex Ianchenko University of Washington</i></p>	<p>Building Science Education Essentials <i>Sam Taylor & Pat Huelman Energy & Resource Efficiency & University of Minnesota</i></p> <p>At the Core: Fundamental Building Science Education Matters More Than Building Type <i>Cheryn Metzger Pacific Northwest National Laboratory</i></p> <p>Building Science Education for Tomorrow's Architects & Engineers <i>Nina Baird Carnegie Mellon</i></p>

12:15pm - 1:15pm	Lunch
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1:15pm - 2:45pm Conference Sessions

TRACK 1	TRACK 2	TRACK 3	TRACK 4
SESSION 5: High Performance Homes	SESSION 6 : Building Enclosures: Multifamily Considerations	SESSION 7: Design Considerations: Senior Housing	SESSION 8: Building Science Education
<p>An Exploratory Study of Three Paths to Green Homes: Energy Star Homes, LEED for Homes, & the National Green Building Standard <i>Jawanda Jackson Michigan State</i></p> <p>Measuring Sustainability in Low-Energy Residential Buildings <i>Joshua Kneifel & Eric O'Rear NIST</i></p> <p>Is Green Housing Healthy Housing? Examining the Evidence <i>Sherry Ahrentzen, Elif Tural, & James Erickson University of Florida & Virginia Tech</i></p>	<p>Evaluate Compartmentalization as a Stack Effect Mitigation Strategy <i>Junting Li University of Toronto</i></p> <p>Numerical Studies on Blockage of Fire Spread and Water Curtain <i>Y.K. Woo Hong Kong Polytechnic University</i></p>	<p>Aging-in-Place Housing: Industry Trends in Pennsylvania <i>Dorothy Gerring & Rob Wozniak Penn College</i></p> <p>Housing Technology for Smart Cities <i>Joe Colistra University of Kansas</i></p> <p>The Longitudinal Impact of Energy Education on Affordable Energy Efficient Multifamily Housing <i>Frederick Paige, Philip Agee, & Andrew McCoy Virginia Tech</i></p>	<p>One Book/Many Topics: But Are They Enough? <i>Walter Grondzik Ball State University</i></p> <p>Experiential Learning Exercises to Further Understanding of Complex Building Science Principles <i>Georg Reichard Virginia Tech</i></p> <p>Implementation of Project Based Learning in a Building Science Curriculum <i>Jamie Russell Appalachian State</i></p>

Final 4th RBDCC Program (continued)

2:45pm - 3:00pm		Break	
3:00pm - 4:30pm		Conference Sessions	
TRACK 1	TRACK 2	TRACK 3	TRACK 4
SESSION 9: High Performance: Passive House	SESSION 10: Building Enclosures	SESSION 11: Design Considerations: Policy & Social Components	SESSION 12: Building Science Education
<p>Can Zero Net Carbon Buildings Scale? Passive House Data Tells the Story. <i>Brandon Nicholson Nicholson Kovalchick Architects</i></p> <p>Passive Building (Passive House) <i>Adam Ugliuzza Intertek</i></p>	<p>Building Envelope as an Effective Strategy for Achieving Sustainable Building Energy Efficiency <i>Joseph Iwano University of the West Indies, Trinidad & Tobago</i></p> <p>Energy Efficient Geometrical Design Parameters of Windows in Residential Building: A comparison between hot and cold climates in the United States <i>Reza Foroughi Penn State</i></p> <p>Windows of Opportunity: Fenestration Innovations, Driven by Demand <i>Bob Dudish Marvin Windows</i></p>	<p>Housing Technology and the Contemporary Policy Context in the U.S. <i>Carlos Martín, Andrew McCoy & Frederick Paige Urban Institute & Virginia Tech</i></p> <p>Social Housing Architecture as a Generator of Social Practices <i>Gülcan Ay Istanbul Technical University</i></p> <p>Context-Specific Cultural Drivers & Barriers to Sustainable & Resilient Building Systems: Lessons from the hot and humid Tanzanian Coast <i>Esther Obonyo Penn State</i></p>	<p>Three Courses/Four Typologies: Experiences with the 2017 Race to Zero Competition <i>Tom Collins & Walter Grondzik Ball State University</i></p> <p>2016-2017 Race to Zero Competition: A Case Study Design for Zero Energy Ready Townhomes <i>Chris Hazel & Sarah Klinetob Lowe Penn State</i></p> <p>Building Science Education: Where Do We Go From Here? Discussion Forum <i>Sam Taylor & Pat Huelman</i></p>
6:00pm - 9:00pm		Happy Hour on the Exhibit Floor!	

Thursday, March 1

8:30am - 10:15am		Keynote Global Innovations in Residential Building: Prefabrication, Modularization & Automation <i>Professor Ryan E. Smith Associate Dean of Research + Community Engagement & Director, Integrated Technology in Architecture Center (ITAC) at University of Utah, College of Architecture + Planning</i>	
Opening Remarks: <i>Dr. Ali Memari</i>			
10:15am - 10:45am		Break	
10:45am - 12:15pm		Conference Sessions	
TRACK 1	TRACK 2	TRACK 3	TRACK 4
SESSION 13: Designing for Resiliency	SESSION 14: HVAC	SESSION 15: Cross Laminated Timber	SESSION 16: Penn State & the UN Global Building Network
<p>Measuring Sustainability & Resilience Tradeoffs across Post-Disaster Temporary Housing <i>Lauren Badeaux & Elaina J. Sutley University of Kansas</i></p> <p>Amphibious House: A Novel Flood Mitigation Strategy <i>Anthony Graham Western Kentucky University</i></p> <p>Enhancing the Damage Prediction Capability of a Tornado Risk Assessment Tool <i>Anant Jain University of Florida Gainesville</i></p>	<p>Balancing Ventilation & Airtightness in Residential Buildings <i>Sean O'Brien & Scott Bondi Simpson, Gumpertz & Heger</i></p> <p>A Net-Zero Energy, High Performance Residential Building Testbed: Performance Comparisons Between Two Equipment Configurations <i>Brian Dougherty NIST</i></p> <p>Integrated Space & Water Heating (Combi) Systems for High-Performance Homes in Cold Climates <i>Pat Huelman University of Minnesota</i></p>	<p>Building Energy and Hygrothermal Analysis of Single Family Residential Building with Laminated Timber <i>Lewis Setter, Eric Smoorenburg & Paulo Tabares Colorado School of Mines</i></p> <p>Numerical Model of Creep Behavior for Axially Loaded CLT Panels <i>Thang Dao University of Alabama</i></p> <p>Fire Performance of CLT Adhesives in Residential Floor Applications <i>Shiling Pei Colorado School of Mines</i></p>	<p>The Global Building Network: Achieving High Performance for Everyone, Everywhere <i>Tom Richard & Jim Freihaut Institute of Energy & the Environment & Penn State</i></p> <p>50 Houses: Global Building Network Passive House Retrofit Project through passivhausMAINE <i>Naomi Beal passivhausMAINE</i></p>

Final 4th RBDCC Program (continued)

12:15pm - 1:15pm		Lunch	
1:15pm - 2:45pm		Conference Sessions	
TRACK 1	TRACK 2	TRACK 3	TRACK 4
SESSION 17: Energy Modeling	SESSION 18: Building Enclosures	SESSION 19: Cross Laminated Timber	SESSION 20: Community Impacts
<p>Closing the Post-Occupancy Gap in Zero Energy Housing <i>Philip Agee Virginia Tech</i></p> <p>Impact of Occupant Behavior in Data-driven Energy Use Modeling in Diverse Residential Buildings Across Multiple Climates <i>Huyen Do Iowa State</i></p>	<p>An Innovative Building System for High-Performance Affordable Housing <i>Pat Huelman University of Minnesota</i></p> <p>Racking Testing Facility to Evaluate In-Plane Performance of Structural Insulated Panels <i>Ryan Solnosky Penn State</i></p> <p>Experimental & Numerical Study of Moisture Movement in Sealed Attics <i>David O. Prevatt University of Florida</i></p>	<p>Cross Laminated Timber as an Alternative for Single Family Construction: A Comparative Cost Study <i>Shiling Pei Colorado School of Mines</i></p> <p>The Use of Cross-Laminated Timber for Mixed-Use Tall Wood Buildings in the US <i>Shaobo Liang North Carolina State University</i></p> <p>Cross Laminated Timber & Beetle Kill Lumber <i>Eric Holt University of Denver</i></p>	<p>The value of campus-based solar demonstration homes for students, faculty, and communities <i>Mahsa Safari Penn State</i></p> <p>Participatory Learning through the Race to Zero Competition <i>Chris Hazel & Sarah Klinetob Lowe Penn State</i></p> <p>GreenBuild: University-Industry Collaboration for an Affordable, Energy Efficient Duplex <i>Jason Grottini, Jordan Robb, & Chris Hazel Envinity Inc. & Penn State</i></p>
2:45pm - 3:00pm		Break	
3:00pm - 4:30pm		Conference Sessions / Tour Option	
3:00pm - 4:30pm Tour Option	<p>Tour of GreenBuild Duplex 1394-1396 University Drive</p> <p><i>Hosted by the Energy Efficient Housing Research Group / Hamer Center for Community Design</i></p>		<p>* Please pre-register for this tour at the registration desk; space is limited!</p>
TRACK 1	TRACK 2	TRACK 3	TRACK 4
SESSION 21: Residential BIM	SESSION 22: Building Enclosures: Innovative Materials	SESSION 23: Concrete + 3D Printing	SESSION 24: Building Enclosures: Control Layers
<p>The Role of BIM in Designing Zero-Net Energy Homes <i>Shahryar Habibi University of Ferrara, Italy</i></p> <p>Software Tool for Automation in Building Energy Simulation Using Building Information Modeling (BIM) <i>Ehsan Kamel New York Institute of Technology</i></p>	<p>Designing High R-value Walls using Stone Wool Insulation <i>Antoine Habellion ROCKWOOL</i></p> <p>Impact of Positioning Phase Change Materials (PCMs) within Building Enclosures on Thermal Performance <i>Abdullah Abuzaid Virginia Tech</i></p> <p>Performance Evaluation of Wall Panels Incorporating New and Innovative Materials Developed with High Insulation Properties <i>Xinrui Lu Penn State</i></p>	<p>A Brief Literature Study of Nanoparticles Supplementation in Civil Cementitious Materials <i>Mehrzad Zahabi Penn State</i></p> <p>Seamless Architecture: Design & Development of Functionally-Graded Green Materials for Building Construction <i>Maryam Hojati, Shadi Nazarian, and José Duarte Bucknell University & Penn State</i></p> <p>Additive Manufacturing of Building Parts: Towards Seamless Architecture <i>Flavio Craveiro, José Duarte, & Shadi Nazarian Penn State</i></p>	<p>Site Quality Assurance Programs – How This Has Improved Air Barrier Installations <i>John Arcidiacono Air Barrier Association of America</i></p> <p>Exterior Sheathing, WRB's, & AB's: Moisture-related material properties and implications on design & in-service performance <i>Danko Davidovic Huber Engineered Woods</i></p>