<table>
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<tr>
<th>April 12</th>
<th>Pre-Conference (Evening)</th>
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<td>Early Evening Registration/Reception at the Kansas City Westin Crown Center</td>
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<tr>
<th>April 13</th>
<th>Monday, Day 1</th>
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<tbody>
<tr>
<td></td>
<td>Registration: 7:00 - 9:00 am</td>
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<td>Continental Breakfast: 7:00 - 8:00 am</td>
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*(session/chair)*

**Plenary**

**Monday AM: Session 1: Plenary Session** 8:00 - 9:45 am

- Welcome: David Herron, Kansas BEC; Henry Green, NIBS; KC mayors (invited); Tim Ryan, City of Overland Park, Kansas, code administrator; and Technical Committee opening remarks

1 NIBS

- P-1 Nolan Browne, director, Fraunhofer CSE, New Trends in Building Energy Efficiency
- P-2 Ed Retzbach, NA manager, Tremco, On Joints, Junctions, and Membranes

**Coffee break** 9:45 - 10:10 am

**Monday AM: Session 2** 10:10 - 11:55 am

2.1 Commissioning and Quality Management in Design

- Brian Stroik

2.2 Next Generation of Integrated Enclosures

- Mark Bomberg

**Lunch:** Noon - 1 pm

**Exhibits open:** 1:00 - 1:30 pm

**Monday PM: Session 3** 1:30 - 3:15 pm

3.1 Living Building Challenge

- Jim Hanford

3.2 FORUM Performance Testing for QA and Commissioning

- Jan Kosny, moderator

**Afternoon Break and Exhibits:** 3:00- 3:45 pm

**Monday PM: Session 4** 3:40 - 5:25 pm

4.1 Design Considerations

- Dudley McFarquhar

- Early Phase Design Energy Modeling to Right-Size Building Enclosure and Mechanical Systems, Jillian Burgess, RA, The Facade Group
- High Performance Detailing, Michael J. Heule and Paul E. Totten, Helix Architecture + Design and Halsall, A Parsons Brinckerhoff Company
- The Importance of Translating an OPR to BOD, Paul E. Totten and Andrew Smith, Halsall, A Parsons Brinckerhoff Company
- Design with Consideration of Climate Change: Paul Totten & Alexandra K. Connor, Halsall, A Parsons Brinckerhoff Company
4.2 Fenestration 2  
**Stanley Yee**
- High-Performance Building Envelopes: Design Methods for Energy-Efficient Facades. Ajla Aksamija, Associate, Perkins + Will, Chicago  
- A Holistic Process for Predictable Curtain Wall Behavior, John Hodder, David Thompson Entuitive Corporation  
- Dynamic Façades: Solving the High Performance Building Challenge without Design Compromise, Helen Sanders, SAGE, Faribault, MN  

**Exhibits Open, 5:25 - 5:55 pm**
**Sponsors' Reception; 5:55 - 7:00 pm**

**April 14**

**Tuesday: Day 2**
**Registration 7:00 - 9:00 am**
**Continental Breakfast 7:00 - 8:00 am**

**Tuesday AM: Session 5**  
8:00 - 9:35 am  
**5. Plenary Session**  
BEC-sponsored session: Form Versus Function. Invited speakers: Ken Shuttleworth, MAKE Architects, London; Tom Simpson, PE, Integral Group, Washington, DC; and John Straube, University of Waterloo

**Break: 9:35 - 9:55 am**

**Tuesday AM Session 6**  
10:00 am - 11:55 am  
**6.1 Smoldering Issues of Fire Performance Evaluation**  
**Richard Keleher**
- State of the Art of the NFPA 285 fire test, Brian Kuhn, Simpson Gumpertz and Heger  
- NFPA 285 in the Field: An Update on Local Adoption, Keith P. Nelson, ATI/Intertek  
- Exterior Combustible Wall Project of the Fire Protection Research Foundation, Amanda Kimball

**Lunch: noon - 1:00 pm**
**Exhibits open: 1:00 - 1:30 pm**

**Tuesday PM Session 7**  
1:30 - 3:15 pm  
**7.1 New Masonry Materials**  
**Dariusz Gawin**
- State of the Art in Evaluation Durability of Exterior Plasters, Dariusz Gawin (invited paper)  
- Thermal Bridging Effects in Concrete and Brick Masonry Wall Units - Jan Kosny, Bryan Urban – Fraunhofer CSE

**7.2 Glazing and Fenestration**  
**Stanley Yee**
- History and Future of Fenestration, Steven Selkowitz, LBNL  
- A Detailed Study of Sunshades and their Effects on Performance, Joe Fong, Walter P. Moore, Houston  
- Re-Glazing of All Glass Curtain-Wall Buildings, James Higgins, Graham Finch,Brian Hubbs, and Ed Thiessen, RDH Building Engineering Ltd, RDH Building  
- Implementation of Multiple Efficiency Strategies Including of Dynamic Daylighting and Glare Control for Two Net-Zero Low Rise Office Buildings, Brandon Tinianov

**Break: 3:15 - 3:40 pm**

**Tuesday PM Session 8**  
3:30 - 5:25 pm  
**8.1 Multi-Unit Residential Buildings: Management, IAQ, and Retrofits**  
**Ali Fallahi**
- Finding an Optimal and Sustainable Mix of Time-Based Maintenance and Condition-Based Maintenance for the Enclosure System, David Albrice and Matthew Branch, RDH Building Engineering  
- Energy Efficient Retrofit of a High-Rise Multi-Unit Residential Building, Brittany Hanam, Lorne Ricketts, Andrew Pape-Salmon, RDH Building Engineering Ltd.  
- Airflow in High-Rise Multi-Unit Residential Buildings, Lorne Ricketts and Graham Finch, RDH Building Engineering Ltd and John Straube, University of Waterloo  
- Detailed Monitoring and Energy Model Development of an Existing Multi-Unit Residential Building, Marianne F. Touchie and Kim D. Pressnail , Department of Civil Engineering, University of Toronto
| 8.2 The Active Side of Passive Houses | • North American Way to Passive House-Based NZEB, Katrin Klingenberg (invited paper)  
• A Critical Analysis of the Passive House Standard for the Climates of the US, Ryan Abendroth  
• Production Homebuilder + Passive house: Lessons Learned, Duncan Prahl, IBACOS  
• Mission Cliffs (Passive House 2013/2014) in Kansas City, David Schleicher and David Hawkins, Prairie Design Build, Kansas City, MO |

| Stephanie Stubbs | Passive Houses (invited paper)  
Stephanie Stubbs  
• A Critical Analysis of the Passive House Standard for the Climates of the US, Ryan Abendroth |

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<tr>
<th>April 15</th>
<th>Wednesday: Day 3</th>
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| Registration 7:00 - 9:00 am  
Continental Breakfast 7:00 to 8:00 am | Wednesday AM: Session 9  
8:00 - 9:45 am  
9.1 Performance of Materials and Systems  
Paul Totten  
• Challenges and Opportunities in Deep Envelope Retrofitting, Paul Bertram, Kingspan  
• Field Performance Study of EIFS System Using Vacuum Insulation Panels, Ali Fallahi, Nitin Shukla, Toni Fontanini, Fraunhofer CSE; Larry Carbury, Dow Corning; Roland Serino, Dryvit; Jan Kosny, Fraunhofer CSE, Boston  
• Thermal Bridging: Observed Impacts and Proposed Improvement for Common Conditions, Andrea Love, Payette Associates Boston |

| 9.2 High-Performance, Ecological Building Envelopes  
Mark Perepelitza | Steve Selkowitz, Testing for development of simulation tools, methods and façade assemblies, LBNL (invited paper)  
• Photography of building spaces to validate radiance daylight analysis, Susan Ubbelhode  
• New developments in testing of operable exterior shading devices for solar control and daylight management, Sabine Hoffman  
• POE results for the GSA Wyatt office building in Portland, relative to building program and design analysis methods, Mark Perepelitza |

| Break: 9:45 - 10:10 am | Wednesday AM: Session 10  
10:10 am - 11:55 am  
10.1 Performance of Materials and Systems  
2  
Jan Kosny  
• Thermal resistance of enclosed reflective airspaces in building applications, Hamed Saber, NRC Canada (invited paper)  
• Field test data from retrofit of a small residential house using EIFS technology, John Edgar, STO Corp, Ali Fallahi, Alliston Watts, Jan Kosny, Fraunhofer CSE, Linda Jeng, Dow Chemical  
• Residential Building with Double Walls - Thermal Performance Analysis and Field Testing, Jan Kosny, Fraunhofer CSE, Boston, Som Shrestha and Kaushik Biswas, Oak Ridge National Laboratory, Oak Ridge, TN, Ali Fallahi and Nitin Shukla, Fraunhofer CSE, Boston  
• Field Performance of Two Aerogel Blankets in a Hot, Dry Climate, Bryan Urban, Nitin Shukla, Tony Fontanini, Jan Kosny, Fraunhofer CSE, Boston |

| 10.2 Evolving Enclosure Constructions  
Graham Finch | Field Monitoring of Embedded Wood Members in Insulated Masonry Walls in a Cold Climate, Kohta and Joseph W. Lstiburek, Building Science Corporation, Somerville, MA  
• Influence of aerogel insulating blankets on wall and floor thermal performance, Mina Akhavan, JRS Engineering, Seattle  
• Cold climate moisture implications of air leakage in spray foam retrofit attic assemblies, Duncan Prahl, IBACOS  
• Glare Study of Highly Reflective Cool Roofing Membrane, Joe Fong, Walter P Moore |

| Lunch: 12:00 - 1:00 PM | Wednesday PM: Session 11  
1:30 - 2:50 pm  
11.1 New Concepts for Walls  
Xing Shi  
• Integrated Systems for Building Upgrade and New Construction, Xing Shi, Mark Bomberg and Michael Gibson  
• Materials and Assemblies for Light-Weight Building Envelopes in Warm Climates, Michael Gibson  
• Next Generation of Building Enclosure—NSF Supported Research at Colorado U, John Zhai and Fred Andreas |
11.2 Renovation and Repairs
David Yarbrough
- Energy challenges related to re-cladding existing glazed curtain walls, Andrew A. Dunlap, Smith Group JIR Inc, Detroit
- Competing performance criteria in renovation and repurposing of existing building exterior envelopes, Paul G. Johnson, Smith Group JIR Inc., Detroit
- Doing It Right the Second Time – Designing Minimally Invasive, Cost-Effective Solutions for Window Repair vs. Replacement, David W. Boyer, Building Envelope Analysis, Lawrence, KS, Ron Tatley, Building Envelope Analysis, Santa Rosa Beach, FL, Stacey Grund, Bldg Env. Analysis, Seattle, Matthew Travis, Bldg Env. Analysis, Lawrence, KS

Break: 2:50 - 3:15 pm

Wednesday PM: Session 12 3:15 - 5:00 pm

12.1 Evolving Enclosure
Constructions 2
Marcin Pazera
- Building Performance Analytics: Methodologies of Design Process Integration, Patricia Andrasik
- Thermal and Hygrothermal Performance of Ventilated Attics With and Without Breathable Underlayment Sudhir Railkar, Adem Chich, Ming Shiaio, Andre Desjarlais, William Miller, ORNL
- The Role of Performance Modeling in the Development of Dynamic Building Envelopes Tim Frank and Chip Clark, Center for Design Research, Virginia Tech

12.2 Insulation and PCM
Mario Medina
- Inward Vapor Drive Analysis of Field Monitored Residential Walls With And Without Exterior XPS insulation. Jonathan Smegal, BScConsult
- Low-cost Bio-Based Phase Change Materials as an Energy Storage Medium in Building Envelopes, Kaushik Biswas, Oak Ridge National Laboratory, Oak Ridge, TN; Nitin Shukla, Energy and Transportation Science Division; Jan Kosny, Fraunhofer CSE, Boston, MA: Ramin Abhari, Syntroleum Corporation, Tulsa
- Field Thermal Performance of Radiant Barriers and IRCC Systems for Attic Retrofits Ali Fallahi, Fraunhofer CSE, Boston, David Yarbrough, R&D Services, Cookeville, TN, and Jan Kosny, Fraunhofer CSE, Boston
- Thermal performance and energy savings potential of attic radiant barrier systems, Som Shrestha, and Andre Desjarlais, group leader, Building Technologies Research and Integration Center, ORNL