
Contents

PANEL 3: INTRODUCTION	3.xi
The National Building Controls Information Program	3.1
Floyd E. Barwig, <i>Iowa Energy Center</i>	
John M. House, <i>Iowa Energy Center</i>	
Curtis J. Klaassen, <i>Iowa Energy Center</i>	
Morteza M. Ardehali, <i>KN Toosi University of Technology</i>	
Theodore F. Smith, <i>The University of Iowa</i>	
Commissioning of Smaller Green Buildings: Expectations vs. Reality	3.15
Eric Baxter, <i>Portland Energy Conservation, Inc.</i>	
David Sellers, <i>Portland Energy Conservation, Inc.</i>	
Marti Frank Tsypin, <i>Portland Energy Conservation, Inc.</i>	
Efficiency, Performance, and Social Issues for Eastern European District Heating	3.27
Dan Birleanu, <i>Energy & Resource Solutions, Inc.</i>	
Brian McCowan, <i>Energy & Resource Solutions, Inc.</i>	
Gary Epstein, <i>Energy & Resource Solutions, Inc.</i>	
Mark D’Antonio, <i>Energy & Resource Solutions, Inc.</i>	
A Computer Simulation Appraisal of Non-Residential Low Energy Cooling Systems in California	3.41
Norman Bourassa, <i>Lawrence Berkeley National Laboratory</i>	
Philip Haves, <i>Lawrence Berkeley National Laboratory</i>	
Joe Huang, <i>Lawrence Berkeley National Laboratory</i>	
Demonstration of Load Shifting and Peak Load Reduction with Control of Building Thermal Mass	3.55
J.E. Braun, <i>Purdue University, Ray W. Herrick Laboratories</i>	
T.M. Lawrence, <i>Purdue University, Ray W. Herrick Laboratories</i>	
Curtis J. Klaassen, <i>Iowa Energy Center</i>	
John M. House, <i>Iowa Energy Center</i>	
Incorporating a Method of Verifying Performance into California’s Nonresidential Energy Standards	3.69
Tav Commins, <i>California Energy Commission</i>	
Jeffrey A. Johnson, <i>New Buildings Institute, Inc.</i>	
Amanda Potter, <i>Portland Energy Conservation, Inc.</i>	

Identifying Energy Savings Potential on Rooftop Commercial Units	3.79
Bob Davis, <i>Ecotope, Inc.</i>	
David Baylon, <i>Ecotope, Inc.</i>	
Reid Hart, <i>Eugene Water & Electric Board</i>	
Two-Pipe HVAC Makes a Comeback: An Idea Discarded Decades Ago May Be the Future of School Heating and Cooling	3.93
Thomas H. Durkin, <i>Veazey Parrott Durkin & Shoulders</i>	
Larry Kinney, <i>E SOURCE/Platts</i>	
Showcasing Energy Efficiency Solutions in a Cold Storage Facility	3.107
Ramin Faramarzi, <i>Southern California Edison Company</i>	
Bruce A. Colburn, <i>Southern California Edison Company</i>	
Rafik Sarhadian, <i>Southern California Edison Company</i>	
Designing the Pentagon for Performance	3.119
E. Franconi, <i>Nexant, Inc.</i>	
J. Bradford, <i>Nexant, Inc.</i>	
M. Selch, <i>Nexant, Inc.</i>	
D. Peters, <i>Southland Industries</i>	
S. Winkler, <i>Southland Industries</i>	
Persistence of Benefits from New Building Commissioning	3.129
Hannah Friedman, <i>Portland Energy Conservation, Inc.</i>	
Amanda Potter, <i>Portland Energy Conservation, Inc.</i>	
Tudi Haasl, <i>Portland Energy Conservation, Inc.</i>	
David Claridge, <i>Texas A&M, Energy Systems Laboratory</i>	
A New Guide for Commissioning Air Handling Systems: Using a Model Functional Test	3.141
Tudi Haasl, <i>Portland Energy Conservation, Inc.</i>	
David Sellers, <i>Portland Energy Conservation, Inc.</i>	
Hannah Friedman, <i>Portland Energy Conservation, Inc.</i>	
Mary Ann Piette, <i>Lawrence Berkeley National Laboratory</i>	
Norman Bourassa, <i>Lawrence Berkeley National Laboratory</i>	
Ken Gillespie, <i>Pacific Gas and Electric Company</i>	
Photovoltaics for Buildings: New Applications and Lessons Learned	3.155
Sheila J. Hayter, <i>National Renewable Energy Laboratory</i>	
Paul A. Torcellini, <i>National Renewable Energy Laboratory</i>	
Michael P. Deru, <i>National Renewable Energy Laboratory</i>	
Retrocommissioning of Two Long-Term Care Facilities in California	3.169
Aleisha Khan, <i>Institute for Market Transformation</i>	
Amanda Potter, <i>Portland Energy Conservation, Inc.</i>	
Tudi Haasl, <i>Portland Energy Conservation, Inc.</i>	

Measured Performance and Design Guidelines for Large Commercial HVAC Systems	3.181
Erik Kolderup, <i>Eley Associates</i>	
Mark Hydeman, <i>Taylor Engineering</i>	
Michael Baker, <i>SBW Consulting, Inc.</i>	
R. Lynn Qualmann, <i>SBW Consulting, Inc.</i>	
Active Load Management with Advanced Window Wall Systems: Research and Industry Perspectives	3.193
Eleanor S. Lee, <i>Lawrence Berkeley National Laboratory</i>	
Stephen E. Selkowitz, <i>Lawrence Berkeley National Laboratory</i>	
Mark S. Levi, <i>U.S. General Services Administration</i>	
Steven L. Blanc, <i>Pacific Gas and Electric Company</i>	
Erin McConahey, <i>Ove Arup and Partners California</i>	
Maurya McClintock, <i>Ove Arup and Partners California</i>	
Pekka Hakkarainen, <i>Lutron Electronics Co., Inc.</i>	
Neil L. Sbar, <i>SAGE Electrochromics, Inc.</i>	
Michael P. Myser, <i>SAGE Electrochromics, Inc.</i>	
Flow Batteries: Has Really Large Scale Battery Storage Come of Age?	3.211
Christopher Lotspeich, <i>Second Hill Group</i>	
David Van Holde, <i>E SOURCE/Platts</i>	
Why the “Simple Underfloor Air Distribution System” Isn’t Quite as Simple as It Seems	3.225
Larry Luskay, <i>Portland Energy Conservation, Inc.</i>	
David Sellers, <i>Portland Energy Conservation, Inc.</i>	
The Integration of Engineering and Architecture: A Perspective on Natural Ventilation for the New San Francisco Federal Building	3.239
Erin McConahey, <i>Ove Arup and Partners California</i>	
Philip Haves, <i>Lawrence Berkeley National Laboratory</i>	
Tim Christ, <i>Morphosis</i>	
High Performance Lighting Options for School Facilities	3.253
Brian McCowan, <i>Energy & Resource Solutions, Inc.</i>	
Thomas Coughlin, <i>National Grid USA</i>	
Peter Bergeron, <i>Energy & Resource Solutions, Inc.</i>	
Gary Epstein, <i>Energy & Resource Solutions, Inc.</i>	
From Design Through Operation: Multi-Year Results from a New Construction Performance Contract	3.269
Naoya Motegi, <i>Lawrence Berkeley National Laboratory</i>	
Mary Ann Piette, <i>Lawrence Berkeley National Laboratory</i>	
Scott Wentworth, <i>City of Oakland</i>	

The California Statewide Outdoor Lighting Baseline Assessment	3.283
Ramona Peet, <i>RLW Analytics, Inc.</i>	
Matt Brost, <i>RLW Analytics, Inc.</i>	
Cathy Higgins, <i>New Buildings Institute, Inc.</i>	
Bulls-Eye Commissioning: Using Interval Data as a Diagnostic Tool	3.295
Will Price, <i>Eugene Water & Electric Board</i>	
Reid Hart, <i>Eugene Water & Electric Board</i>	
Effects of Interior Design on the Daylight Availability in Open Plan Offices	3.309
Christoph F. Reinhart, <i>National Research Council Canada</i>	
Making Energy Intensive HVAC Processes More Sustainable via Low Temperature Heat Recovery	3.323
David Sellers, <i>Portland Energy Conservation, Inc.</i>	
Tom Stewart, <i>Memorial Hospital of Carbondale</i>	
Multiple Benefits of Distributed Fuel Cell Generation in Commercial Buildings	3.337
Joel N. Swisher, <i>Rocky Mountain Institute</i>	
Replacing Distribution Transformers: A Hidden Opportunity for Energy Savings	3.351
Alison Thomas, <i>U.S. Department of Energy, Federal Energy Management Program</i>	
Michael Shincovich, <i>U.S. Department of Energy</i>	
Steve Ryan, <i>U.S. Environmental Protection Agency</i>	
Dave Korn, <i>Cadmus Group, Inc.</i>	
John Shugars, <i>Lawrence Berkeley National Laboratory</i>	
Zion National Park Visitor Center: Significant Energy Savings Achieved Through a Whole-Building Design Process	3.361
Paul A. Torcellini, <i>National Renewable Energy Laboratory</i>	
Ron Judkoff, <i>National Renewable Energy Laboratory</i>	
Sheila J. Hayter, <i>National Renewable Energy Laboratory</i>	
The Costs and Benefits of Commissioning Oregon Public Buildings	3.373
Bing Tso, <i>SBW Consulting, Inc.</i>	
Michael Baker, <i>SBW Consulting, Inc.</i>	
Andrzej Pekalski, <i>Oregon Office of Energy</i>	
Daylight Design for Multistory Offices: Advanced Window Wall Design in Practice	3.385
M. Susan Ubbelohde, <i>University of California, Berkeley</i>	
George A. Loisos, <i>Loisos + Ubbelohde Associates</i>	