On behalf of the hosts and co-sponsors of the eleventh annual International Conference for Enhanced Building Operations, welcome! Our unique program brings together prominent international and local experts from many areas related to building commissioning, intelligent controls for energy efficiency, and enhanced building operations with ways to apply these tools to achieve related environmental and policy goals. This year’s two-day conference on October 19 and 20 consists of 14 technical sessions with 71 presentations by representatives from 17 countries.

The Energy Systems Laboratory at The Texas A&M University System and all of our hosts and sponsors are committed to providing our attendees with a very useful package of information that will help them improve the performance of their building programs – something to take home and use!

ICEBO also features two pre-conference workshops on October 18 – “Continuous Commissioning®” and a workshop on “Sustainability Through Intelligent Controls—Applying an Open Interoperable Model to Building Management and Energy Efficiency.” A third workshop on “Green Workforce/Building Operator Training” will be held on Friday, Oct 21st. Please take advantage of these training opportunities.

We are confident that you will profit from the experiences and technical expertise of our presenters and panelists, and, best of all, the interaction with so many energy professionals in one place.

Malcolm E. Verdict, CEM
Conference Chair
International Conference for Enhanced Building Operations

Jeff S. Haberl, Ph.D.
Technical Director
International Conference for Enhanced Building Operations
**Technical Sessions**
The technical sessions consist of 25-minute presentations. There will be a 5-minute break between papers to permit movement of conferees between sessions.

**Workshops**
Continuous Commissioning® workshop, sponsored by the Energy Systems Laboratory, on Tuesday, October 18, from 8:30am to 4:00pm, in Salon H.

Sustainability Through Intelligent Controls—Applying an Open Interoperable Model to Building Management and Energy Efficiency Workshop, sponsored by LonMark International and Echelon Corporation, on Tuesday, October 18, from 9:00am to 3:00pm, in Salon I.

Green Workforce/Building Operator Training, sponsored by CUNY Institute for Urban Systems, on Friday, October 21, from 8:30am to 12:00pm, in Salon F.

**Reception**
Sponsored by Johnson Controls International

Wednesday, October 19, 2011
5:00-7:00, Salon E and Foyer E

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**Planning Committee**

- Dr. Amad Al-Mulla
  Kuwait Institute for Scientific Research
- Mr. Ron Bernstein
  Echelon Corporation
- Mr. Michael Bobker
  City University of New York Institute for Urban Systems
- Mr. Joe Borowiec
  New York State Energy Research and Development Authority
- Dr. David Claridge
  Energy Systems Laboratory, The Texas A&M University System
- Mr. Barry Haaser
  LonMark International
- Dr. Jeff Haberl
  Energy Systems Laboratory, The Texas A&M University System
- Mr. Jeff Harris
  Alliance to Save Energy
- Dr. Volker Hartkopf
  Center for Building Performance & Diagnostics, Carnegie Mellon University
- Mr. Don LaVada
  New York State Energy Research and Development Authority
- Mr. Peter Savio
  New York State Energy Research and Development Authority
- Mr. Malcolm Verdict
  Energy Systems Laboratory, The Texas A&M University System
Francis J. Murray
President and CEO, New York State Energy Research and Development Authority (NYSERDA)

Frank was appointed President and CEO on January 26, 2009. Prior to his appointment, Frank served as Senior Advisor at the international environmental consulting firm, Ecology and Environment, Inc. Frank was previously a policy advisor to the United States Secretary of Energy, assisting in the development of the Clinton Administration’s national energy policy.

In the early 90’s, Frank served as the New York State Commissioner of Energy and Chairman of the NYSERDA Board of Directors. He also served as Chairman of the State Energy Planning Board. In 1985, Frank was appointed Deputy Secretary to Governor Mario Cuomo for Energy and the Environment, a position he held until 1992. Frank began his work on New York State energy issues as legislative counsel and then as an energy and environmental policy advisor to Governor Hugh Carey.

Laurie Kerr
Senior Policy Advisor, Office of Long-Term Planning and Sustainability, New York City Mayor’s Office

Laurie Kerr is the Senior Policy Advisor in the NYC Mayor’s Office responsible for the development of New York City’s green building and energy efficiency policies. She has been instrumental in the creation of PlaNYC, New York’s influential plan for sustainable growth through 2030, including the New York City greenhouse gas reduction plan, the comprehensive policies to reduce energy efficiency in existing buildings, the greening of the city’s codes and regulations, and energy-aligned lease language. She has over 15 years experience practicing architecture, and has written articles on architecture for the Wall Street Journal, Slate, and Architecture. Prior to receiving her Master’s in Architecture from Harvard, Laurie earned degrees in engineering and applied physics. She was given the AIANY Public Architect Award for 2011.
In 1975, Prof. Hartkopf co-initiated and subsequently directed the first multi-disciplinary program in Architecture, Engineering, and Planning in the USA with grants from the National Science Foundation and the building industry. In 1981, he co-founded the Center for Building Performance and Diagnostics (CBPD) at Carnegie Mellon University. Between 1981-1985, Prof. Hartkopf developed jointly with Vivian Loftness and Peter A.D. Mill, the Total Building Performance Evaluation Method at Public Works Canada while on an Executive Interchange Program. He created and directs the Advanced Building Systems Integration Consortium (ABSIC), comprising leading building industries, major foreign and U.S. governmental agencies, and Carnegie Mellon University. ABSIC is the first private-public partnership in the building industry and was recognized by the National Science Foundation in 1990 to be the first NSF I/UCRC in the building industry.

Currently, Dr. Hartkopf is the academic advisor of the Bayer EcoCommercial Building Program and serves as the chair of the think tank of best practices within the United Nations Environmental Program Sustainable Building and Climate Initiative.

In March 2010, Dr. Morad Atif was appointed Director General of the National Research Council Canada’s Institute for Research in Construction (NRC-IRC). NRC-IRC is Canada’s leading construction research and technology development agency and is the custodian of the development and delivery of the Model National Building Codes for Canada.

Dr. Atif had been Director of NRC-IRC’s Indoor Environment Research Program since 1999. He joined NRC-IRC as a research officer in 1993, after spending two years as a faculty member at Texas A&M University’s College of Architecture and Department of Construction Science, where he earned a Ph.D. in Architecture and Construction Science. He also holds a Masters degree in Architectural Technology from the University of California.

The chair of several international conferences and an active contributor to many committees and associations, Dr. Atif is the Canadian representative and chair of the Executive Committee of the International Energy Agency’s (IEA) Energy Conservation in Buildings and Community Systems, a collaborative research partnership of 26 countries. He also serves on the Boards of Directors of the Continental Automated Building Association, the International Council on Buildings (CIB) and Communities of Tomorrow.

Dr. Atif is the author of more than 80 publications and the recipient of many awards, including two NRC Outstanding Achievement Awards, a Presidential award from the Illuminating Engineering Society of North America and two Caudill Student Research Fellowships from Texas A&M University.
Conference Sessions

Day One

Wednesday morning, October 19, 2011

7:00-5:00  Registration
7:15-7:50  Breakfast for Wednesday Conference Authors & Session Chairs, Golden Board Room
7:15-7:50  Attendee Continental Breakfast Foyer E
8:00-9:05  Opening Plenary Session, Salon E

Welcome
Mr. Malcolm Verdict  
Conference Chair, Energy Systems Laboratory  
Mr. Michael Bobker  
CUNY Institute for Urban Systems  
Dr. David Claridge  
Director, Energy Systems Laboratory

Keynote Address
Mr. Francis J. Murray  
President and CEO, New York State Energy Research and Development Authority

9:15-12:05 Sessions 1-4

Session 1: Advanced Commissioning Strategies-I
Salon F

Session Chair: James Watt  
Energy Systems Laboratory, The Texas A&M University System

John C. Gardner, ONtility.

9:45-10:10  “Continuous Control in Buildings with Bond Graphs”  
Wim Zeiler, Eindhoven University of Technology.

10:10-10:40 Coffee Break

Oliver Baumann, Ebert & Baumann Consulting Engineers.

11:10-11:35  “Initial Commissioning of a Water-to-Water GHP System in KIER”  
Jiyoung Kim, Jea Chul Jang, Eun Chul Kang, Ki Chang Chang, Euy Joon Lee, Korea Institute of Energy Research, Yongchan Kim, Korea University.

11:40-12:05  “Theoretical Minimum Energy Use of a Building HVAC System”  
Oleksandr Tanskyi, Energy Systems Laboratory.

Session 2: IAQ Commissioning Best Practices
Salon G

Session Chair: Joseph Martinez, Energy Systems Laboratory, The Texas A&M University System

9:15-9:40  “Indoor Conditions Study and Impact on the Energy Consumption for a Large Commercial Building”  
Tiberiu Catalina, Technical University of Civil Engineering of Bucharest.

Andrew Lerpiniere, Ove Arup & Partners Ltd.

10:10-10:40 Coffee Break

10:40-11:05  “CO2 - Based Demand-Controlled Ventilation Control Strategies for Multi-Zone HVAC Systems”  
Nabil Nassif, Ph.D., North Carolina AT&T State University.

11:10-11:35  “Airflow Characteristics of Direct-Type Kitchen Hood Systems in High-Rise Apartment Buildings”  
Myunsig Park, Innovations Optima, LLC.

11:40-12:05  “Improve Indoor Air Quality, Energy Consumption and Building Performance: Leveraging Technology to Improve All Three”  
Duke Wiser, Dynamic Air.

Session 3: Building Optimization Using Data Analysis-I
Salon H

Session Chair: Michael Bobker, CUNY Institute for Urban Systems

9:15-9:40  “A Probability Extension of PCA to Detect and Diagnose Sensor Faults in Air Handling Units”  
Zhengwei Li, Georgia Institute of Technology.

Joan Effinger, PECI.

10:10-10:40 Coffee Break

Daniel Coakley, National University of Ireland.

11:10-11:35  “Functional Verification through Operation Diagnostics”  
Ben Burgoyne, Ebert & Baumann Consulting Engineers.

11:40-12:05  “Energy-data Dashboards and Operators: Designing for Usability in New York City Schools”  
Michael Bobker, CUNY Institute for Urban Systems.
**Conference Sessions**

**Day One**

**Session 4:** Northeast Track/Advances in the Region: Programs - Research - Practice

**Salon I**

**Session Chair:** Mark Miller, Strategic Building Solutions

**9:15-10:30** “Regional Utility Programs for Operational Improvement”

Panelists:
- Sandra LaFlamme, Vermont Energy Investment Corp.
- Amit Kulkarni, National Grid
- Eric Sermakian, Northeast Utilities (Connecticut)
- David Pospisil, Consolidated Edison of NY

**10:30-11:00** Coffee Break

**Session 4:** Northeast Track (continued)

**Session Chair:** ClaraRose Voigt, NYSERDA

**11:00-11:50** “NYS State and NYC Programming for Operational Improvement”

Panelists:
- ClaraRose Voigt, NYSERDA
- Ellen Ryan, Mike Dipple, NYC Department of Citywide Administrative Services

**12:05 - 1:30** Luncheon, Salon E

Guest Speaker:
Ms. Laurie Kerr
Office of Long-Term Planning and Sustainability, New York City Mayor’s Office

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**Wednesday afternoon, October 19, 2011**

**Day One**

**1:45-5:00** Sessions 5-8

**Session 5:** Advanced Commissioning Strategies-II

**Salon F**

**Session Chair:** Joseph Martinez, Energy Systems Laboratory, The Texas A&M University System

**1:45-2:10** “Automated Performance Management”

Kirk Drees, Johnson Controls, Inc.

**2:15-2:40** “Bridging the Gap Between Commissioning Measures and Large Scale Retrofits in Existing Buildings”

John Bynum, Alaina Jones, David E. Claridge, Energy Systems Laboratory

**2:40-3:10** Coffee Break

**3:10-3:35** “A Systematic Methodology to Underpin the CC® Process Using Calibrated BES Models”

Gearóid White, Marcus Keane, Paul Raftery, Daniel Coakley, Informatics Research Unit for Sustainable Engineering.

**3:40-4:05** “The Role of Incentives in Building Controls Marketplace”

Cory Vanderpool, EnOcean Alliance.

**4:10-4:35** “The Sustainable Building-Accelerator”

### Conference Sessions

#### Day One

<table>
<thead>
<tr>
<th>Session 6: High Performance/Net Zero Buildings</th>
<th>Salon G</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Session Chair:</strong> Volker Hartkopf, Carnegie Mellon University</td>
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</tr>
</tbody>
</table>
| **1:45-2:10** | “Global Energy, Environmental Trends and Challenges: The Need for Best Building Practices”  
Volker Hartkopf, Dr. Ing, Center for Building Performance and Diagnostics (CBPD), Carnegie Mellon University. |
Jeffrey Harris, Alliance to Save Energy. |
| **2:40-3:10** | Coffee Break |
| **3:10-3:35** | “A Tale of Two Buildings: Achieving Energy Efficiency”  
Scott Rouse, Energy @ Work. |
| **3:40-4:05** | “Testing and Evaluation of a Power Factor Correction for Power-Savings Potential”  
Ahmad Alotaibi, Kuwait Institute for Scientific Research. |
Banu Erdim, Gulten Manioglu, Istanbul Technical University. |
| **4:40-5:05** | “A New Web-based Detailed Weather Data System Providing Global Energy Support for Precision Energy Modeling Analyses and Tracking”  
John Keller, Charles Khuen, Weather Analytics, Inc. |

<table>
<thead>
<tr>
<th>Session 7: Building Optimization Using Data Analysis-II</th>
<th>Salon H</th>
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<tbody>
<tr>
<td><strong>Session Chair:</strong> Juan-Carlos Baltazar, Energy Systems Laboratory, The Texas A&amp;M University System</td>
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</tbody>
</table>
| **1:45-2:50** | “Establishing Field Tested Integrated Design and Delivery Methodology for Retrofitting Commercial Buildings”  
Panelists:  
- Jane Snowden, IBM Research  
- Timothy Wagner, United Technologies Research Center  
- Satish Narayanan, United Technologies Research Center  
- Gregg Scott, Penn State Campus Development Office |
| **2:50-3:20** | Coffee Break |
| **3:20-4:35** | “Innovations in Energy-efficient Systems for Commercial Buildings and Data Centers”  
NYS Energy Regional Innovation Cluster (ERIC).  
Panelists:  
- H. Ezzat Khalifa, Environmental Quality Systems STAR Center  
- Anna Dyson, Rensselaer Polytechnic Institute  
- Alan Hedge, Cornell University  
- Stephen Samouhos, Grove School of Engineering, CCNY/MIT |

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<tr>
<th>Session 8: Northeast Track/Advances in the Region: Programs, Research, Practice</th>
<th>Salon I</th>
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<tbody>
<tr>
<td><strong>Session Chair:</strong> Jim Freihaut, Penn State Department of Architectural Technology</td>
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#### Reception

**5:00-7:00**  
Reception - sponsored by Johnson Controls International  
Salon E and Foyer E
**Program at a Glance**

<table>
<thead>
<tr>
<th>Tuesday, October 18</th>
<th>7:00 am - 7:00 pm - Workshops and Conference Registration, Golden Board Room</th>
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<tbody>
<tr>
<td>8:30 am - 4:00 pm</td>
<td>Continuous Commissioning® Workshop, <strong>Salon H</strong></td>
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<td>Sustainability Through Intelligent Controls-Applying An Open Interoperable Model To Building Management And Energy Efficiency, <strong>Salon I</strong></td>
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<th>Wednesday, October 19</th>
<th>7:00 am - 5:00 pm - Conference Registration, Promenade</th>
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<tbody>
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<td>7:15 am - 7:50 am</td>
<td>Breakfast for Wednesday Conference Authors &amp; Session Chairs, <strong>Golden Board Room</strong></td>
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<td>Continental Breakfast for Attendees, <strong>Foyer E</strong></td>
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<tr>
<td>8:00 am - 9:05 am</td>
<td>Opening Plenary Session, Francis J. Murray, NYSERDA, <strong>Salon E</strong></td>
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<tr>
<td>9:15 am - 12:05 pm</td>
<td>Technical Sessions 1-4</td>
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<tr>
<td>Coffee Break - Foyer</td>
<td>10:10 am - 10:40 am</td>
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<td>Session 1- Advanced Commissioning Strategies-I</td>
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<td>Session 2- IAQ Commissioning Best Practices</td>
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<td>Session 3- Building Optimization Using Data Analysis-I</td>
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<td>10:10 am - 10:40 am</td>
<td>Session 4- Northeast Track/Advances in the Region: Programs, Research, Practice*</td>
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<td>10:30 am - 11:00 am</td>
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<tr>
<td>12:05 pm - 1:30 pm</td>
<td>Luncheon - Guest Speaker: Ms. Laurie Kerr, <em>Office of Long-Term Planning and Sustainability, Salon E</em></td>
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<td>1:45 pm - 5:00 pm</td>
<td>Technical Sessions 5-8</td>
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<td>Coffee Break - Foyer</td>
<td>2:40 pm - 3:10 pm</td>
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<td>2:40 pm - 3:10 pm</td>
<td>Session 5- Advanced Commissioning Strategies-II</td>
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<td>2:40 pm - 3:10 pm</td>
<td>Session 6- High Performance/Net Zero Buildings</td>
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<td>2:40 pm - 3:10 pm</td>
<td>Session 7- Building Optimized Using Data Analysis-II</td>
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<td>2:40 pm - 3:10 pm</td>
<td>Session 8- Northeast Track/Advances in the Region: Programs, Research, Practice*</td>
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<td>2:50 pm - 3:20 pm</td>
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<tr>
<td>5:00 pm - 7:00 pm</td>
<td>Reception - Sponsored by Johnson Controls International, <strong>Salon E and Foyer E</strong></td>
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<td>9:15 am - 12:05 pm</td>
<td>Technical Sessions 9-12</td>
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<tr>
<td>Coffee Break - Foyer</td>
<td>10:10 am - 10:40 am</td>
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<td>10:10 am - 10:40 am</td>
<td>Session 9- Modeling/Energy Efficiency</td>
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<td>10:10 am - 10:40 am</td>
<td>Session 10- Building Standards/Government Programs</td>
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<td>10:10 am - 10:40 am</td>
<td>Session 11- Continuous Commissioning®</td>
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<td>10:10 am - 11:00 am</td>
<td>Session 12- Northeast Track: Existing Building Commission, Workforce Development and Training*</td>
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<tr>
<td>12:10 pm - 1:40 pm</td>
<td>Luncheon - Guest Speaker: Dr. Morad Atif, Director General, <em>Institute for Research in Construction, National Council Canada, Salon E</em></td>
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<tr>
<td>1:45 pm - 4:15 pm</td>
<td>Technical Sessions 13-14</td>
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<tr>
<td>Coffee Break - Foyer</td>
<td>2:40 pm - 3:10 pm</td>
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<tr>
<td>2:40 pm - 3:10 pm</td>
<td>Session 13- Intelligent Network and Control Systems*</td>
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<tr>
<td>2:40 pm - 3:10 pm</td>
<td>Session 14- International Government Building Programs</td>
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<tr>
<td>2:40 pm - 3:10 pm</td>
<td>*Invitational PowerPoint Presentations</td>
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<tr>
<td>4:15 pm - 4:45 pm</td>
<td>Conference Wrap-up and invitation to ICEBO 2012 in Manchester, United Kingdom, <strong>Salon E</strong></td>
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<tr>
<td>Friday, October 21</td>
<td>8:30 am - 12 noon - Green Workforce/Building Operator Training, <strong>Salon F</strong></td>
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</table>
Thursday morning, October 20, 2011

7:00-5:00  Registration

7:30-8:25  Poster Sessions and Continental Breakfast
Foyer E

7:30-8:25  Breakfast for Thursday conference authors and session chairs
Golden Board Room

8:30-9:10  Opening Plenary Session, Salon E

Plenary Speaker: Dr. Volker Hartkopf, Director, Center for Building
Performance and Diagnostics,
Carnegie Mellon University

9:15-12:05  Sessions 9-12

Session 9:  Modeling/Energy Efficiency
Salon F

Session Chair:  Jeff Haberl, Energy Systems Laboratory,
The Texas A&M University System

9:15-9:40  “Analysis Methodology for Large
Organizations’ Investments in Energy Retrofit of
Buildings”
Yeonsook Heo and Godfried Augenbroe, Georgia
Institute of Technology, Ruchi Choudhary, University
of Cambridge.

9:45-10:10  “Design of a Personalized Lighting Control
System Enabled by a Space Model”
George Suter, Ph.D., Filip Petrushevski, Milos
Sipetic, Department of Digital Architecture and
Planning, Vienna University of Technology.

10:10-10:40  Coffee Break

10:40-11:05  “State-based Modeling of Buildings and
Facilities”
M. Norbert Fisch, Dr. Ing., Claas Pinkernell, Markus
Look, Stefan Plessner, Dr. Bernhard Rumpe, Aachen
University.

11:10-11:35  “Simulation as a Tool to Develop Guidelines of
Envelope Design of a Typical Office Building in
Egypt”
Mina Michel Samaan, Ahmed Nabih Ahmed,
Osama M. A. Farag, Magdi El-Sayed Khalil,
Mansoura University, Dresden University of
Technology.

Session 10:  Building Standards/Government Programs
Salon G

Session Chair:  Jeffrey Harris, Alliance to Save Energy

9:15-9:40  “International Comparison of Energy Labeling
and Standards for Energy Efficient and Green
Buildings”
Dr. Peter Hennicke, Shritu Shrestha, Tobias
Schleicher, Wuppertal Institute for Climate,
Environment and Energy.

Session 11:  Continuous Commissioning® Case Studies
Salon H

Session Chair:  James Watt, Energy Systems Laboratory,
The Texas A&M University System

9:15-9:40  “Comprehensive Energy Management and
Optimization Program—Alamo Colleges, San
Antonio, Texas”
Joseph T. Martinez, Energy Systems Laboratory.

10:10-10:40  Coffee Break

10:40-11:05  “Comprehensive Energy Efficiency in City of
Austin Facilities”
Dennis Lilley, Austin Energy.

11:10-11:35  “Application of CC® at a Corporate
Headquarters Facility in Dallas, TX”
Ken Meline, John Kimla, Command Commissioning,
LLC.

11:40-12:05  “Systems Commissioning and Continuous
Commissioning® for Tripler Army Medical
Center”
Fred Schroeder, HHS Associates.

Session 12:  Northeast Track:  Existing Building Commissioning,
Salon I

Session Chair:  Joseph Borowiec, NYSERDA
### Conference Sessions

#### Day Two

**9:15-9:35**  
“Guidelines for Existing Building Commissioning”  
Mark Miller, Building Commissioning Association.

**9:40-10:00**  
“An Approach to Facilities Operational Improvement”  
Om Taneja, US-General Services Administration, Region 2.

**10:05-10:25**  
“Monitoring-based Commissioning - a technology-driven approach”  
Steve Pascone, Mach Technologies, Bill O’Connor, EnerNoc

10:30-11:00 **Coffee Break**

**Session 12:**  
Northeast Track: Workforce Development and Training (continued)

Session Chair: Kimberly Lenihan, NYSERDA

**11:00-11:20**  
“The Role of the Operating Engineers’ Union”  
Howard Styles, International Union of Operating Engineers Local 94.

**11:25-11:45**  
“Drivers of Commercial Building Operator Skills”  
Jeffrey Domianski, CushmanWakefield.

**11:50-12:10**  
“The Universities’ Role and Response”  
Amanda Daly, City University of New York.

12:10-1:40 **Luncheon, Salon E**

**Guest Speaker:**  
Dr. Morad Atif, Director General, Institute for Research in Construction, National Research Council Canada

**Thursday afternoon, October 20, 2011**

1:45-4:15 **Sessions 13-14**

**Session 13:**  
Intelligent Network and Control Systems  
Salon F

Session Chair: Ron Bernstein, Echelon Corporation

**1:45-2:10**  
“SmartGrid & Smart Building Convergence—How Will Buildings Respond in a Demand Response Event?”  

**2:15-2:40**  
Mike Gibson, Senior Engineer, Echelon Corporation.

2:40-3:10 **Coffee Break**

3:10-3:35 **“LonMark Open Solutions: An Industry Update—New Products, Solutions, Educational Programs, Standards, and how They Affect the Future of Building”**  
Ron Bernstein, Executive Director Emeritus, LonMark International.

Panelists:  
- Jeremy J. Roberts  
  Technical Director, LonMark International  
- Mike Gibson  
  Senior Engineer, Echelon Corporation  
- Dr. Ahmad Al-Mulla Ph.D.  
  Kuwait Institute for Scientific Research

**Session 14:**  
International Government Building Programs  
Salon G

Session Chair: Malcolm Verdict, Energy Systems Laboratory, The Texas A&M University System

1:45-2:10 **“Demand Side Management for Schools and Governmental Buildings in the State of Kuwait”**  
A. Al-Mulla, Ph.D., A. ElSherbini, A. Al-Otaibi, H. Ishaqali, Kuwait Institute for Scientific Research.

2:15-2:40 **“MEW Efforts in Reducing Electricity and Water Consumption in Government and Private Sectors in Kuwait”**  
Iqbal Al-Tayar, Ministry of Electricity & Water, Kuwait.

2:40-3:10 **Coffee Break**

3:10-3:35 **“Building Energy Certification System: Application to a Building in Lisbon and Paths to a Future Enhanced Scheme”**  
Pedro Nunes and Guilherme Carrilho da Graça, University of Lisbon, Maria Lerer, NaturalWorks.

Merve Atmaca, Istanbul Technical University, Turkey

**Conference Wrap-up**

4:15-4:45 **Conference Wrap-up and Invitation to ICEBO 2012 in Manchester, United Kingdom, Salon E**  
Mr. Malcolm Verdict, Energy Systems Laboratory, The Texas A&M University System  
Mr. Roy Stewart, Centre for Construction Innovation Northwest, Manchester, United Kingdom
CONTINUOUS COMMISSIONING® WORKSHOP
Salon H

Tuesday, October 18, 2011 8:30 am – 4:00pm
The one-day Continuous Commissioning® Workshop presents techniques practiced daily by the engineers at the Energy Systems Laboratory. These techniques are proven to save significant dollars from the existing Continuous Commissioning® buildings at Texas A&M University, airports, school districts, hospitals, and many commercial and government facilities. Now is your chance to learn state-of-the-art, hands-on knowledge from these experts.

Instructors are Dr. David Claridge and Mr. James Watt, Director and Associate Director respectively of the Energy Systems Laboratory. They are responsible for leading the Lab’s Continuous Commissioning® effort and have extensive experience in technology transfer and workshops.

The topics included for instruction are:

• Introduction to the Continuous Commissioning® Process
• Fundamentals for Continuous Commissioning®
• Tools and Equipment
• Ensuring Optimum Building Performance
• Typical Continuous Commissioning® Measures
• Financing Options
• Measurement & Verification for Continuous Commissioning®
• Case Studies of Continuous Commissioning®

SUSTAINABILITY THROUGH INTELLIGENT CONTROLS—APPLYING AN OPEN INTEROPERABLE MODEL TO BUILDING MANAGEMENT AND ENERGY EFFICIENCY
Salon I

Tuesday, October 18, 8:30am – 3:00pm
Intelligent control systems are vital to any sustainable facility project. Intelligent networked controls systems enable devices to share information with each other, with a host monitoring system, and with other higher-level enterprise applications. Discussion will cover:

• Introduction to Energy Efficiency Through Intelligent Controls
• Elements of an Open Controls Platform
• Introducing LON (Local Operating Networks)

GREEN WORKFORCE/BUILDING OPERATOR TRAINING
Salon F

Friday, October 21, 8:30am – noon
This workshop presents current best practices in training of incumbent building engineering staff for new energy management and “green building” responsibilities. Significant skills enhancement for middle level and senior building operators is necessary to meet today’s energy goals. Developing and delivering appropriate training programs is key to unlocking in-house operational opportunities and maintaining persistent energy reductions. The workshop will provide an opportunity for discussion and exchange of ideas on training programs needs. Topics include:

Working with clients to define needs and goals
• Skill areas that commonly need improvement
• Effective instructional techniques
• Practice-Based Exercises
• Moving from knowledge to behavior
• Evaluation methods
• Certifications

The lead instructor and moderator is Mr. Michael Bobker, M.Sc., C.E.M., Director of the Building Performance Lab at the CUNY Institute for Urban Systems. Mr. Bobker will be joined by Mr. Volkert Braren, NYC Department of Education, Division of School Facilities and Mr. Patrick Dail, School of Professional Studies, City University of New York. Mr. Braren and Mr. Dail have developed and operate one of the largest building operator training programs in the country.
Continuing Education & Professional Development
The ICEBO and the workshops meet the criteria for continuing education and professional development hours required by many state professional engineering boards. Check with Christina Chea at the registration desk for details or information.

Proceedings
One flash drive of the 2011 Proceedings is included in the conference registration fee. Additional copies may be purchased at the Conference Registration Desk, or from the Energy Systems Laboratory, 979.847.8950.

Homepage
http://icebo.tamu.edu
POSTSCRIPT

The ICEBO brings together an international group of practitioners, policy makers and researchers who routinely improve the health and comfort and minimize the energy consumption, operating costs and environmental impacts of buildings. ICEBO 2011 is the leading forum for timely exchanges among individuals interested in the continuous improvement and maintenance of buildings, design, their energy usage and environmental impact.

Malcolm Verdict, C.E.M.
ICEBO Chair
HOSTED BY:
Energy Systems Laboratory
The Texas A&M University System

and

New York State Energy Research and Development Authority (NYSERDA)

CO-HOSTED BY:
CUNY Institute for Urban Systems