

HVAC/R & Controls Supplier Summit:
Challenges and Opportunities for Improving Energy Efficiency

Thursday, February 3, 2011 • Las Vegas Hilton • Las Vegas, Nevada

Please note that the agenda, including times and room assignments, may change. Any updates will be sent to all registrants.

7:30–8:00 **Registration and Coffee**
Pavilion Foyer

8:00–10:00 **Plenary Session**
Pavilion 1 **Introduction**

Doug Brookman, Facilitator

Welcome

Lynn G. Bellenger, ASHRAE President

DOE Commercial Buildings Updates

Joseph W. Hagerman, DOE Commercial Team Leader

Commercial Building Energy Alliances

Brian Holuj, DOE Coordinator for CBEAs

RTU Performance Specification Launch CBEA Representatives

DOE Lab Tech Support for Suppliers

Joseph W. Hagerman, DOE Commercial Team Leader

HVAC/R&C Needs for the Future: CBEA Perspectives

Retailer Energy Alliance Jim McClendon, Walmart Stores, Inc.

Commercial Real Estate Energy Alliance John Scott, Cushman & Wakefield Inc.

Hospital Energy Alliance Richard Beam, Providence Health & Services

Question-and-Answer Forum

Doug Brookman, Facilitator

Overview of Breakout Sessions

Doug Brookman, Facilitator

10:00–10:20 **Coffee Break**
Pavilion Foyer

10:20–11:15 **Concurrent Breakout Sessions**

Each session will begin with one brief (5-minute) presentation by a subject matter expert followed by panelists' comments on some or all of the specific issues listed.

Commercial Building Energy Alliances

Breakout Session	Speakers	Room
<p>O&M as an OEM Sales Tool</p> <ul style="list-style-type: none"> • How will OEM's O&M approach help with product perception in the marketplace? • How can the OEM drive O&M into design to lower warrantee risk? • How can integrated O&M design improve return business? • Designing equipment for O&M; construction-cabinet-access • Minimizing O&M with higher-quality equipment • What are owners willing to pay for? 	<p>Subject Matter Expert</p> <ul style="list-style-type: none"> • Robert Baker, BBJ Environmental Solutions <p>Commercial Building Owners</p> <ul style="list-style-type: none"> • Richard Heath, SUPERVALU INC. • Richard Beam, Providence Health & Services • Paul Holliday, Lowe's Companies, Inc. <p>DOE Lab Facilitator</p> <ul style="list-style-type: none"> • Dr. Michael Brambley, Pacific Northwest National Laboratory 	Pavilion 1
<p>OEM Retro & Continuous Commissioning</p> <ul style="list-style-type: none"> • Auto commissioning modes integrated into controller • Default self-test scenarios • Selectable performance alarms • Integrated metering • Continuous commissioning through better products • What are owners willing to pay for? 	<p>Subject Matter Expert</p> <ul style="list-style-type: none"> • James Bochat, Commissioning Concepts <p>Commercial Building Owners</p> <ul style="list-style-type: none"> • Corey Zarecki, Gundersen Lutheran Health System • Dave Harpring, Yum! Brands • Kinga Porst, U.S. General Services Administration (GSA) <p>DOE Lab Facilitator</p> <ul style="list-style-type: none"> • Dr. Philip Haves, Lawrence Berkeley National Laboratory 	Pavilion 4
<p>Integrated Equipment Design (IED) (with retrofit focus)</p> <ul style="list-style-type: none"> • Regional focus <ul style="list-style-type: none"> ○ Hot/dry ○ Hot/humid ○ Extreme cold • Integrated options <ul style="list-style-type: none"> ○ SHW heating ○ Evap. pre-cooling ○ Condensate recovery • How does IED aid manufacturers in providing the optimum equipment, the first time? • How does IED increase manufacturers' product success rate? • IED complemented retrofits as a sales tool 	<p>Subject Matter Expert</p> <ul style="list-style-type: none"> • Dr. Gregory Dobbs, The Pennsylvania State University <p>Commercial Building Owners</p> <ul style="list-style-type: none"> • Dave Jeffers, John Deere • Scott Williams, Target Corp. • John Scott, Cushman & Wakefield Inc. <p>DOE Lab Facilitator</p> <ul style="list-style-type: none"> • Daniel Studer, National Renewable Energy Laboratory 	Pavilion 6

11:15–12:45 Pavilions 2–3	Lunch Boxed Lunch Service	Self-Service Boxed Lunches
	Smart Grid: A Building-Utility Partnership	Steven T. Bushby, Leader of the Mechanical Systems Controls Group, National Institute of Standards and Technology
	Commercial Building Consortium Update	Diana Lin, Program Manager, National Association of State Energy Officials (NASEO)
	Closing Remarks	Brian Holuj, DOE Coordinator for CBEAs
	Overview of Speed-Dating	Doug Brookman, Facilitator
12:45–1:00 Pavilion Foyer	Break	
1:00–2:15 Pavilion 10	Speed-Dating	<i>Ten 5-minute, one-on-one interviews between CBEA members and suppliers; 2-minute transition time between dates.</i>
	Close	



**Lynn G. Bellenger, P.E., Fellow ASHRAE
2010–11 President**

Lynn G. Bellenger, P.E., Fellow ASHRAE, is a partner with Pathfinder Engineers and Architects LLP, Rochester, N.Y. Bellenger is ASHRAE certified as a Building Energy Modeling Professional and a High Performance Building Design Professional.

Bellenger is the first female president in the Society's 116-year history. As ASHRAE's president, Bellenger directs the Society's Board of Directors and oversees the Executive Committee.

Her presidential theme, *Modeling a Sustainable World*, notes that in energy simulation, daylight analysis, CFD, and BIM software, we have powerful modeling tools that enable us to create and refine our vision of a building—its appearance, systems, operation, and performance. Those resources, used effectively in an integrated design process for new buildings and in analyzing retrofit opportunities in existing buildings, will help us guide building owners, architects, developers, and contractors in building orientation, shading, and shape and in selecting materials, windows, equipment, and systems that optimize building performance.

ASHRAE, founded in 1894, is an international organization of some 50,000 persons. Its sole objective is to advance through research, standards writing, publishing, and continuing education the arts and sciences of heating, ventilating, air conditioning, and refrigeration (HVAC&R) to serve humanity and promote a sustainable world.

**Joseph W. Hagerman
Acting Leader, Commercial Building Initiative
Building Technologies Program, U. S. Department of Energy**

Joseph Hagerman is driving DOE's Commercial Building Initiative (CBI) to improve the energy efficiency of domestic commercial buildings by researching and deploying energy-efficiency technologies, strategies, and design tools. The Initiative aims to impact 3 billion square feet of commercial building space annually. To help reach this goal, DOE collaborates with commercial building owners and operators from key industry sectors. Major commercial program activities include the Commercial Building Energy Alliances (CBEAs) and the Commercial Building Partnerships (CBP). CBP unites building owners and operators with DOE, the national laboratories, and private-sector building experts to work as teams on individual retrofit and new construction building projects designed to transform building delivery and management processes to achieve whole-building energy savings of 30 percent or greater in retrofits and 50 percent or greater in new construction.

Before joining DOE, Hagerman was the Project Manager for the Building Technologies group at the Federation of American Scientists (FAS). There, Hagerman conducted research in new building technologies while demonstrating these technologies in the public sector. His efforts helped address environmental and energy injustice in affordable housing through the development of energy-efficient advanced wall systems. In 2005, Hagerman won the Metropolis Next Generation Design prize for developing a manufacturing strategy to cost-effectively deliver bio-remediating plant material inside open cell interlocking concrete pavers called "biopavers." He was also awarded the 2005 Rafael Vinoly Fellowship, giving him the opportunity to conduct architectural-based research with Rafael Vinoly Architects (RVA), an internationally renowned design firm.



Brian Holuj
Commercial Buildings Specialist
U.S. Department of Energy

Brian Holuj is a Presidential Management Fellow at the U.S. Department of Energy. He works in the Office of Energy Efficiency and Renewable Energy as a Commercial Buildings Technology Specialist with a focus on leveraging public-private partnerships to enable commercial buildings to achieve exemplary energy performance. In this capacity, he works directly with the Department of Energy's national laboratories and commercial building stakeholders to develop, implement, and evaluate cutting-edge technologies, design tools, and best practices at demonstration sites throughout the country. He supports a host of domestic and international efforts to advance energy efficiency in commercial buildings through collaborative initiatives such as the Clean Energy Ministerial, coordination of multiple technology demonstration and deployment initiatives as the DOE lead for the Commercial Building Energy Alliances, and development of strategic guidance and evaluation criteria for the program's various initiatives in coordination with senior DOE staff and support personnel.

Prior to this, Holuj received a Bachelor of Science in Aviation Human Factors from the University of Illinois and worked for several years in robotics and automation. He returned to academia in 2007 to pursue a Master of Public Administration and a Master of Arts in International Relations with a focus on energy policy at the Maxwell School of Citizenship and Public Affairs. During his graduate studies, Holuj conducted energy policy research as a Harold Rosenthal Fellow at the Pentagon and as an intern at the U.S. Embassy in Baku, Azerbaijan. His resulting research paper, *Azerbaijan at a Crossroads: Unlocking the Caspian's Natural Gas Wealth*, was published in the 2009 edition of the Michigan Journal of Public Affairs.



Scott D. Williams
Group Manager of Mechanical Engineering
Target Property Development

Scott D. Williams, P.E., oversees the Target Property Development mechanical engineering team in development of mechanical prototype documents, R&D efforts, construction document production, and support of the operations of mechanical systems in Target facilities. Target operates more than 1,750 stores in the United States as well as distribution centers, corporate buildings, and data centers. Before joining Target in 1999, Williams spent 18 years with a Minneapolis consulting firm, managing projects for healthcare facilities, college campuses, and corporate clients. He is a member of ASHRAE and past president of the Minnesota chapter. Williams has been involved with the Retailer Energy Alliance since its inception, serving on the Steering Committee and HVAC Systems Project Team.



James P. McClendon
Director of Systems Engineering
Design & Construction
Walmart Stores, Inc.

James P. McClendon joined Walmart in a leadership position to develop new prototype designs and identify retrofit strategies to reduce total energy consumption in new construction and the existing store base.

McClendon leads a team in response to Walmart's publically stated goal to reduce greenhouse gas consumption 20 percent in their existing store base and to develop and open a new prototype that is 25 percent more efficient. Efforts toward this goal have led to many new industry developments including LED case lighting, refrigeration system technologies, and radiant cooling approaches utilizing indirect evaporative processes. Prior to joining Walmart, Mr. McClendon accumulated over 20 years of experience in the HVAC/R industry through both owning and managing companies from service and contracting to design and engineering. He has worked in the commercial, industrial, institutional, and governmental sectors representing the contractor, designer, supplier, and owner perspectives.



John K. Scott
Director, Client Solutions Group
Cushman & Wakefield Inc.

John K. Scott serves as the Director of C&W's Florida Client Solutions Group. He is currently responsible for the oversight of C&W's management/agency leasing of commercial buildings and corporate facilities totaling in excess of 10 million square feet in his broad geographic area encompassing South Florida. With a focus on institutional clients, his team has increased the returns on investment (ROI) to 30 percent, enhanced services, increased productivity with technology, and built the portfolio through partnering with both domestic and international real estate investors.

Scott is a 30-year veteran within real estate asset management and previously served as The Hogan Group Vice President of Property Management. While there, Scott oversaw management, accounting, and tenant construction for the Waterford at Blue Lagoon Office Park, a 2.5 million-square-foot "Class A" office and 100,000 square-foot retail portfolio. Some of the projects Scott was involved with include more than 10 million square feet of office-retail-hotel projects; Urban Centre, Harbor Island, 100-200-300 Lincoln Center, and Sun Bank Center.

Scott has been an influential figure in the Building Owners and Management Association (BOMA) locally, regionally, and internationally by serving as the BOMA Southern Region Past President for 2006–2007. He has chaired and supported BOMA's International Political Action Committee from 2004 to 2009 as it continues to collect funds in order to advance beneficial commercial real estate legislation on the federal, state, and local levels, which includes successful legislation on leasehold improvement depreciation and tax incentives for energy-efficient retrofits. He was appointed Chair of the BOMA International Sustainability and Market Initiative Task Force at the 2009 BOMA Winter Business meeting and completed his position as a charter member on the BOMA 360 building program that was released to the commercial real estate industry in April 2009.

Richard Beam (requested)



Robert G. Baker, FASHRAE, OPMP
BBJ Environmental Solutions

Robert G. Baker is considered an authority on infection control, HVAC maintenance, and related indoor environmental issues. BBJ product users include building owners, their staffs, and the service and product suppliers who serve them. He is past President of the Indoor Air Quality Association and a Fellow of ASHRAE, member of its Standards

Committee, and several technical committees, as well as an ASHRAE Distinguished Lecturer. He has more than 30 years of experience in all facets of building operation and maintenance and is a certified Operations and Performance Management Professional (OPMP).

Baker founded BBJ Environmental in 1993 and repurchased it in 2008. Before BBJ Environmental, he worked as an executive in both the public and private sectors. He was given the ASHRAE Distinguished Service Award in June 2007 and is a member of the ASHRAE Code Interaction Subcommittee and Standards Project Liaison Subcommittee. He served on the ASHRAE committee that developed criteria for awarding certifications for HVAC System Maintenance Management. An avid researcher, Baker holds both product and method patents in HVAC/R system cleaning technology and in 2001 received the IAQA award for product technology. His current research interest is the impact of maintenance of HVAC systems on air quality, system life, and energy efficiency.



**James Bochat, LEED AP, NEBB
President
Commissioning Concepts**

James Bochat, president of Commissioning Concepts, has been involved in the Arizona engineering and construction industry for more than 40 years. His experience includes mechanical design, mechanical construction, controls, test and balance, commissioning, retrocommissioning, and ongoing commissioning. He is a former President of the National Environmental Balance Bureau (NEBB) and has been instrumental in developing and teaching commissioning standards for NEBB. NEBB is a certification agency providing training and certification for Building Systems Commissioning, Retro Commissioning and Test & Balancing. He is involved with ASHRAE, serving on national committees, GPC-0.2 (retrocommissioning), PMP Project Committee (performance measurement protocols), and ASHRAE PMP Best Practices Committee. Commissioning Concepts is a commissioning consulting firm providing commissioning, retrocommissioning, and ongoing commissioning and building testing services to facility owners. Cx Concepts is a member of the U.S. Green Building Council (USGBC).



**Dr. Gregory M. Dobbs
Director, Distributed Generation Research and Education
The Pennsylvania State University**

Greg Dobbs is currently on the engineering faculty of Penn State University based at the Navy Yard in Philadelphia, where he directs the DOE GridSTAR SmartGrid Research and Education Center and contributes to the Greater Philadelphia Innovation Cluster (GPIC) for Energy Efficient Buildings, a DOE Energy Innovation Hub. Prior to that, Dobbs was a Principal Engineer at United Technologies Research Center working on energy-efficient equipment and green buildings. He is on the Board of the International Building Performance Simulation Association (IBPSA-USA) and the USGBC Research Advisory Committee and serves on several ASHRAE technical, publication, and standards committees. Dobbs is also a former Director of the Connecticut Green Building Council and holds nine patents.



Steven T. Bushby
Leader, Mechanical Systems and Controls Group
National Institute of Standards and Technology

Steven Bushby is the leader of the Mechanical Systems and Controls Group in the Engineering Laboratory at NIST in Gaithersburg, Maryland. He manages the Embedded Intelligence in Buildings research program that includes activities related to the development of national and international standards for integrated building automation systems, automated fault detection and diagnostics for HVAC system components, automated commissioning tools for HVAC control systems, developing a test bed for studying the interaction of multiple building control systems, and interactions between building systems and a future Smart Grid.

Bushby has received several awards, including the Department of Commerce Bronze Medal in 1992 for his work in developing the BACnet protocol; a Hammer Award from Vice President Al Gore in 1996 for his work applying BACnet technology in government buildings; the NIST William P. Slichter Award in 1996 for outstanding work to improve NIST's ties to industry; the ASHRAE Distinguished Service Award in 2004; and was named an ASHRAE Fellow in 2008. Bushby joined ASHRAE in 1987 and immediately became involved in TC 1.4 Control Theory and Application. He served in many roles on TC 1.4, including a term as Chair. He was an original member of SPC 135 (BACnet Committee) and served as an officer of the SPC and the follow-on SSPC for 17 years, including a term as SSPC Chair. During that time, he initiated the creation of Working Group 3 of ISO/TC 205, Building Control System Design, and he continues to serve as Working Group Convener. He served a term in ISAS and later served on the Standards Committee in various roles including a term as Chair. He is currently a member of SRC and Chair of SPC 201P Facility Smart Grid Information Model.



Diana Lin
Program Manager
National Association of State Energy Officials (NASEO)

Diana Lin manages the Commercial Buildings Consortium (CBC), a public-private collaboration of the commercial building industry with the objective of rapidly accelerating market transformation in the commercial building sector for both new construction and existing buildings. Established in response to the Energy Independence and Security Act of 2007, the CBC provides an organizational framework for sustained public-private collaboration among commercial buildings professionals and practitioners, industry stakeholders, researchers and educators, utilities, and government agencies at all level. CBC members work with DOE to help achieve near-term results and chart a path to statutory long-term goals for low-energy commercial buildings by capturing market feedback on key barriers; identifying innovative strategies and successful approaches; and facilitating information and knowledge transfer among stakeholders. NASEO serves as the program secretariat for the CBC.

Additionally, Lin leads and supports many of NASEO's other building program activities, including administering NASEO's state energy financing task force, managing a multi-state residential labeling and retrofits project, and supporting NASEO's building codes and performance contracting efforts. Prior to joining NASEO, Lin worked as a program associate at the Alliance to Save Energy, managing international projects on energy efficiency in buildings and transportation, serving as the primary staff for commercial buildings, supporting overall program and project development, and managing donor relationships. Lin has co-authored publications and presented on energy efficiency in buildings and transportation.

Commercial Building Energy Alliances

Retailer Energy Alliance

Retailers

A&P
 Applebee's International, Inc.
 Army & Air Force Exchange Service
 Bank of America
 Belk, Inc.
 Best Buy Co., Inc.*
 BJ's Wholesale Club, Inc.
 Boston Market Corp.
 Chipotle Mexican Grill, Inc.
 CKE Restaurants, Inc.
 – Includes: Carl's Jr., Hardee's, Green Burrito, Red Burrito
 Costco Wholesale Corp.
 Crate and Barrel
 Einstein Noah Restaurant Group, Inc.
 Food Lion, LLC
 Ford Motor Co.
 Harris Teeter Inc.
 JCPenney*
 John Deere
 Kohl's Department Stores*
 Lamey-Wellehan Shoes
 Lowe's Companies, Inc.*
 Macy's, Inc.
 McDonald's Corp.*
 OfficeMax Inc.
 Panda Restaurant Group, Inc.
 – Includes: Panda Express, Panda Inn, Hibachi-San
 PETCO Animal Supplies, Inc.
 ProLogis
 Publix Super Markets
 REI
 Rutter's Holdings, Inc.
 Safeway Inc.
 Sears Holdings Corp.
 Sonic Corp.
 Staples, Inc.*
 SUPERVALU INC.*
 Target Corp.*
 The Home Depot, Inc.*
 The Stop & Shop Supermarket Co.
 Toyota Motor Sales, U.S.A., Inc.
 U.S. General Services Administration
 Walgreen Co.
 Walmart Stores, Inc.*
 Wawa, Inc.
 Weis Markets
 Wendy's/Arby's Group, Inc.
 Whole Foods Market, Inc.*
 Yum! Brands*
 – Includes: A&W Restaurants, KFC, Long John Silver's, Pizza Hut, Taco Bell

Other Members

AIA
 ASHRAE*
 IES*
 IFMA
 National Association of Convenience Stores
 Retail Industry Leaders Association
 Unified Foodservice Purchasing Co-op, LLC

Commercial Real Estate Energy Alliance

Building Owners and Operators

AtSite
 Bank of America
 Big Rock Partners, LLC
 Calvert Group, Ltd.
 Cassidy Turley
 CB Richard Ellis Group, Inc.*
 Cen-Tex Certified Development Corp.
 Core Properties, Inc.
 Corporate Office Properties Trust
 Cushman & Wakefield Inc.*
 Dacra Development
 Edens & Avant
 Forest City Enterprises, Inc.
 GE Capital Real Estate
 Glenborough, LLC
 Grubb & Ellis Co.*
 H&R Block Inc.
 HAL Real Estate Investments, Inc.
 Hilton Worldwide*
 Hines*
 Hyatt Hotels Corp.
 IBM
 InterContinental Hotels Group
 Jones Lang LaSalle*
 Ledcor Industries, Ltd. — U.S. Building Group
 Liberty Property Trust
 Marriott International, Inc.
 Mesa Lane Partners, LLC
 MGM Resorts International*
 Opus Corp.
 Prudential Financial, Inc.
 Regency Centers Corp.
 Ryan Companies US, Inc.
 Schaad Companies
 Sharpe Properties Group, LLC
 Simon Property Group, Inc.
 Stream Realty Partners, L.P.
 The Malcolm Bryant Corp.
 The PNC Financial Services Group, Inc.
 The Related Companies, L.P.
 The Walt Disney Co.*
 The Westfield Group
 Tishman Speyer Properties
 Transwestern Property Co.*
 Twentieth Century Fox Film Corp.
 U.S. General Services Administration*
 USAA Real Estate Co.*
 Vornado Realty Trust
 Wright Runstad & Co.
 Winstanley Enterprises
 Wyndham Hotels and Resorts, LLC*

Other Members

American Hotel & Lodging Association*
 ASHRAE*
 BOMA International*
 IES*
 IFMA
 International Council of Shopping Centers*
 NAIOP*
 National Multi Housing Council
 Sustainability Roundtable Inc.
 The Real Estate Roundtable*

Hospital Energy Alliance

Hospitals/Healthcare Facilities

Adventist HealthCare
 Advocate Trinity Hospital
 A.O. Fox Memorial Hospital
 Ascension Health*
 Boulder Community Hospital
 Catholic Health Initiatives (CHI)
 Catholic Healthcare West*
 Clarion Hospital
 Cleveland Clinic*
 Dartmouth-Hitchcock Medical Center
 Geisinger Health System
 Gundersen Lutheran Health System*
 Hackensack University Medical Center
 Health Care REIT
 HealthSouth
 Hospital Corporation of America*
 IASIS Healthcare
 Inova Health System
 James J. Peters VA Medical Center
 Johns Hopkins Health System
 Kaiser Permanente*
 Legacy Health System
 Mayo Clinic
 Metro Health Hospital
 NewYork-Presbyterian Hospital*
 Palomar Pomerado Health
 Partners HealthCare
 PeaceHealth
 Practice Greenhealth
 Providence Health & Services*
 Rush University Medical Center
 San Luis Valley Regional Medical Center
 Sinai Health System
 St. Mary's Medical Center
 Summa Health System
 Texas Children's Hospital
 Texas Medical Center (TECO)*
 TRICARE Management Activity (TMA)*
 University of Pittsburgh Medical Center*
 U.S. Department of Veterans Affairs*
 U.S. General Services Administration
 Veterans Health Administration
 West Chester Medical Center
 Yale-New Haven Hospital

Other Members

ASHE*
 ASHRAE*
 IES*
 IFMA
 VHA

* Steering Committee members