TC 7.5 Smart Building Systems

Program Subcommittee Meeting

Las Vegas

Sunday (1/29) 5:30 pm - 6:00 pm Pompeian III

Agenda

1. Self-introduction
2. Review of programs presented at Las Vegas
3. Brief review of the program tracks and timeline for Long Beach
4. Program ideas for Long Beach and the future

Programs presented at Las Vegas

Sponsoring Committee	Program Time	Session Chair	Session Title	Co-Sponsoring Committee
7.5 Smart Building Systems	Seminar 14 Sunday 1:30 PM - 3:00 PM	Xin Hu	Data Driven Energy Auditing, Measurment and Verification	7.6 Building Energy Performance
7.5 Smart Building Systems	Seminar 35 Tuesday 8:00 AM - 9:30 AM	Zheng O'Neill	Energy Efficiency Assessment in Industrial Facilities: Case Studies and Lessons	
8.11 Unitary and Room Air Conditioners and Heat Pumps	Seminar 13 Sunday 11:00 AM - 12:30 PM	David P. Yuill	Yes, it is Your Fault - How Faults Affect Your System's Performance and How to Model the Faults' Effects in Advance	7.5 Smart Building Systems 7.3 Operation and Maintenance Management
1.4 Control Theory and Application,	Seminar 20 Monday 8:00 AM - 9:30 AM	Joseph Kilcoyne	Fresh Insights on Building Automation: A Seminar by the YEA Group	7.5 Smart Building Systems
MTG.OBB Occupant Behavior in Buildings	Seminar 57 Tuesday 11:15 AM - 12:45 PM	Bing Dong	Occupant Behavior driven Building Operation and Maintenance	7.5 Smart Building Systems

Program tracks and timeline for Long Beach

- *Track 1: Fundamentals and Applications*

  Track Chair: Frank Schambach

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  It's back to the basics! This track provides the foundation for design and construction of HVAC&R components and their application. This track seeks papers and programs of varying levels to provide discussion on theories, models, designs and shared experiences. Topics may range from fan laws and psychometrics to room air distribution and heat transfer and much more.

- *Track 2: HVAC&R Systems and Equipment*

  Track Chair: Jennifer E. Leach

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  What system and equipment are best for my building? Selection of equipment and design of systems is critical for effective HVAC&R operation and usually has more than one right answer. This track will provide engineers, designers, contractors, owners and building operators the tools to properly design, select and operate traditional, non-traditional and hybrid equipment and systems. The papers and programs within this track may range from basic concept to the technical analysis of system performance.

- *Track 3: Refrigeration*

  Track Chair: Vikrant Aute

  Email: vikrant@umd.edu

  The refrigeration cycle is a key component to our daily needs, as it is used for thermal comfort, food storage, creating ice and medicinal needs. There have been numerous improvements and changes to refrigeration systems and refrigerants to accommodate the increased system efficiency and reduce environmental impact. This track seeks papers and programs that address the wide range of developments and applications of refrigerants, including alternative lower-GWP refrigerants, variable refrigerant flow applications, refrigerant management and food storage.

- *Track 4: Building Life Safety Systems*

  Track Chair: Robert Alan Neely

  Email: alan_neely@pghcorning.com

  Building life safety systems are critical in commercial facilities to protect building occupants from fires and power outages. This track focuses on building egress, fire protection systems, fire alarms, emergency lighting, fire and smoke barriers, and special hazard protection and dscribes key factors to consider when designing these life safety systems. Papers and programs are sought to evaluate design strategies for the life safety systems noted above along with building specific life safety systems, such as gas detection systems, kitchen ventilation and smoke evacuation systems, etc.

- *Track 5: Controls*

  Track Chair: Melanie Derby

  Email: derbym@ksu.edu

This track will explore smart building systems and how they can be incorporated into commercial facilities to help reduce energy consumption and improve occupant comfort. As owners and designers incorporate more controls systems with web and cloud access into buildings, there is a concern that this allows more opportunities for hackers to gain access into sensitive and confidential databases. The track will include programs about effective building controls, integration of multiple building systems (ie HVAC, lighting, security, water consumption, etc), along with measures to keep this information safe, while maintaining the flexibility of remote control/access of building systems.

- *Track 6: Commissioning: Optimizing New and Existing Buildings and their Operation*

Track Chair: Dennis Alejandro

Email: denzjac@yahoo.com

High efficiency building systems come at a cost, and after the owner's initial investment it is important to verify that the system components are operating as the designer intended. Secondly, the systems need to be operated properly to reach and maintain the system efficiency levels. This track seeks papers and programs providing lessons learned and recommendations for successful commissioning projects. This track also seeks case studies of existing buildings with a retro-commissioning plan to reduce energy consumption and evaluate the payback of these modifications.

- *Track 7: Net Zero Energy Buildings: The International Race to 2030*

Track Chair: Jason DeGraw

Email: jason.degraw@nrel.gov

Title 24 and Architecture 2030 have ambitious goals for all commercial buildings in California to be Net Zero Energy (NZE) by the year 2030. This track will assist the design team and owners to evaluate various systems (including HVAC, building envelope, lighting, domestic water and renewable energy system), design strategies, construction measures and building operation to achieve NZE. The programs within the track will also explore the advancing code and regulations that countries around the world are implementing to reduce building energy consumption.

- *Track 8: Residential Buildings: Standards Guidelines and Codes*

Track Chair: Kimberly Pierson

Email: kdpwildcat@gmail.com

ASHRAE is known for its standards and design guidelines and their evolution to improving the built environment and its systems. This track will inform designers, contractors and owners of the current requirements and upcoming changes to ASHRAE's low-rise residential guidelines: Standard 90.2, Standard 62.2 and Guideline 24. This track also seeks papers and programs for cutting-edge residential systems and the incorporation of ASHRAE standards in the design.

- *Track 9: Research Summit*

Track Chair: Ann Peratt

Email: ann.peratt@gmail.com

The fifth annual Research Summit brings together distinguished researchers to present the latest research results. Papers are requested on the following topics: 1) building science research that address the performance of buildings systems and occupant usage and 2) renewable energy research and its impact as we move towards net zero energy buildings.

Conference Program Chair: Ann Peratt

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Staff Support

For information on the technical program, special events, special sessions and general conference inquiries

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Technical Support

For technical problems or for help in submitting an abstract online, email Tech Support

August 29, 2016	Conference Paper Abstracts and Technical Papers Due
September 9, 2016	Conference Paper Abstract Notifications Due
December 9, 2016	Final Conference Papers Submitted for Review (Includes Bio, Learning Objectives and Methods of Assessment)
January 2, 2017	Website Opens for Seminar, Forum and Workshop Proposals
January 16, 2017	Conference Paper Accept/Revise/Reject Notifications Due
February 6, 2017	Seminar, Forum and Workshop Proposals Due
February 10, 2017	Revised Conference Papers/Final Technical Papers Due
February 20, 2017	Conference and Technical Paper Final Accept/Reject Notifications

Program ideas for Long Beach and the future

Type	Session Chair / Speakers	Proposed Title	Status
Seminar	Andreas Athienitis	Model Predictive Control (MPC) Case Studies in Commercial and Institutional Buildings	For Long Beach?
Seminar	Carlos Haiad & Glenn Remington	The role of cloud-based communication on smart meter technology.	For Long Beach
Seminar	Chris Kinney/Michael Munroe/Glenn Remington	FDD and Clouds?	For Long Beach
Seminar	Carol Lomonaco	Cyber Security on Building Systems	For Long Beach
Seminar	Srinivas Katipamula	Improving Energy Efficiency of Commercial Buildings thru Data Analytics	For future
Seminar	Nick Gayeski	Edge computing, Cloud Analytics, and On-Premise Systems – Architectures for Smart Building Systems	For future
Seminar	Nick Gayeski / Speakers from Armstrong	Smart Transducers with Embedded Diagnostics	For future
Seminar, co-sponsor TC 7.9	Song Li & Carol Lomonaco	How BAS can Enhance Existing Building Commissioning	For future
Seminar	Kristin Heinemeier / Kristin &Jon Douglas, someone from TC 7.9?	Fault Detection and Retro-commissioning: Where is the Line and Does it Matter?	For future
Workshop	Kristin Heinemeier	Lab Methods for verifying that FDD tools for RTUs really work: Will Standard 207 really work?	For future
Seminar	Glenn Remington	Case Studies: Using FDD for smarter facility operations / Lessons Learned from FDD implementation	For future