

**TC 7.5 Smart Building Systems  
Program Subcommittee Meeting**

**Houston**

Sunday (6/24)    5:30 pm - 6:00 pm    Grand C/Hilton

**Agenda**

1. Self-introduction
2. Brief review of the program tracks for Houston
3. Program ideas for the future conference (Atlanta, etc)

**Programs presented at Houston (sequence by time)**

Sponsoring Committee	Program Time	Session Chair	Session Title	Co-Sponsoring Committee
7.6 Building Energy Performance	Seminar 2 Sunday, 8:00 AM -9:00am	Eric Yang	Energy Analytics in Virtual Energy Audits	7.5 Smart Building Systems
1.4 - Control Theory and Application	Seminar 11 Monday, 8:00 AM - 09:30 AM	Chariti Young,	Applying Analytics to Existing HVAC Systems: Benefits, Challenges and Lessons Learned	7.5 Smart Building Systems
MTG.OBB - Occupant Behavior in Buildings	Seminar 18 Sunday 1:30 PM - 3:00 PM	Bing Dong	Outcomes from IEA EBC Annex 66 Project on Occupant Behavior	7.5 Smart Building Systems
7.5 Smart Building Systems	Seminar 27 Monday 8:00 AM -9:30am	David Yuill	Supermarket Refrigeration System Diagnostics: Opportunities and State of the Art	
1.4 - Control Theory and Application	Seminar 29 Monday 9:45 AM -10:45am	Joseph Kilcoyne	Control Freaks and Internet of Things Geeks: The Future of Building Automation	7.5 Smart Building Systems
7.5 Smart Building Systems	Seminar 43 Tuesday 8:00 AM -9:30am	Carol Lomonaco	What is BACnet Tagging About?	1.4 - Control Theory and Application and SSPC 135, TC 1.5

7.5	Smart Building Systems	Seminar 50 Tuesday 11:00 AM -12:30pm	Paulo Cesar Tabares-Velacso	Assessing the Impacts of Extreme and Future Weather Scenarios on the Building, City and Grid Scale	
7.5	Smart Building Systems	Seminar 60 Wednesday 8:00 AM -9:30am	Xiaohui Zhou	Building Simulation Tools and Models Needed for Assessing the Impacts of Extreme and Future Weather Scenarios on the Building, City and Grid Scale	

## Program tracks and timelines for Houston

**1. Systems and Equipment:** HVAC&R Systems and Equipment are constantly evolving to address the changing requirements of the built environment. Papers and programs in this track will focus on the development of new systems and equipment, improvements to existing systems and equipment, and the proper application and operation of systems and equipment.

**Track Chair:** Joseph Firrantello

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**2. HVAC&R Fundamentals and Applications:** Fundamentals are the foundation for understanding applications in engineering. Key components of ASHRAE fundamentals include thermodynamics, psychrometrics, fluid and mass flow. This track provides opportunities for papers and presentations of varying levels across a large topic base. Concepts, design elements and shared experiences for theoretical and applied concepts of HVAC&R design are included.

**Track Chair:** Rick Hermans

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**3. Refrigeration:** Refrigeration is a critical element of modern life, from preserving food and medicine to maintaining comfort. With significant changes on the horizon for refrigerant regulations, along with new applications for refrigeration systems being frequently applied, there is more need than ever to understand both the fundamental and advanced concepts and issues related to refrigeration. Papers and programs in this track will focus on refrigerants, refrigerant regulation, refrigeration cycles, and refrigeration applications.

**Track Chair:** Sonya Pouncy

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**4. Construction, Operation, and Maintenance of High Performance Systems:** The design of high performance buildings and systems has become an increasingly important focus of those in the construction industry. While designing high performance facilities is important, there have been numerous cases where a building with high performance design objectives have failed to achieve targeted performance. Ultimately, construction, commissioning, operation, and maintenance of facilities is critical to meeting targeted performance levels. Papers and programs in this track will focus on meeting high performance design goals through construction and operation phases of a project.

**Track Chair:** Leticia De Oliveira Neves

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**5. Common System Issues and Misapplications:** With the number of possible system and equipment options and combinations available, along with increasingly capable and complex automation systems, it is no surprise that issues are frequently encountered with HVAC&R systems. While some of these issues may be unique, many have been experienced previously. Papers and programs in this track will focus on issues or misapplications that are frequently observed, and opportunities to avoid these issues in the future.

**Track Chair:** Lee Riback

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**6. The Convergence of Comfort, Indoor Air Quality, and Energy Efficiency:** With the importance placed on optimizing comfort, indoor air quality, and energy efficiency, there are often trade-offs that must be made. Improvements in one of these areas may necessitate compromise in others. Additionally, there are numerous other codes and standards that create similar challenges in optimizing systems. Papers and programs in this track will focus on strategies to limit required compromises, and on finding the best set of design criteria for each building or system.

**Track Chair:** Ashish Rakheja

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**7. Building Integrated Renewables and Natural Systems:** As the movement toward more sustainable buildings and net-zero buildings continues to grow, the inclusion of building integrated renewable energy systems paired with other natural systems will become increasingly common. At the same time, advances are being made with respect to integrating renewable energy systems into the built environment. Papers and programs in this track will focus on advancements in building integrated renewable systems, application of building integrated renewable systems, and the use of renewable and natural systems in the move toward net-zero buildings.

**Track Chair:** Maggie Moninski

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**8. The Engineer's Role in Architecture:** As the built environment becomes more complex, the role of the engineer in developing high performance facilities is increasingly important. With significant attention being paid to integrated teams and early involvement by all team members, what is being done well, and what can be done better? Papers and programs in this track will focus on improving the design and construction process by defining the roles to be played by engineers moving forward.

**Track Chair:** Ashu Gupta

## Timelines

Friday, August 3, 2018 – Seminar, Workshop, Forum, Debate and Panel submissions due

## Program ideas for Huston and the future

Type	Session Chair / Speakers	Proposed Title	Status	Updates
Seminar	Kristen Cetin	Smart products for residential and commercial	For Houston	Talk with residential TC; net zero building talk and a link from Zheng.
Seminar by TC 1.5	Carol Lomonaco	Cyber security consultants what they do	For Houston	TC 7.5 is co-sponsoring
Seminar	TBD	Demand response seminar	For Houston	
Seminar	TBD	FDD application at the supermarket (outcome of RP-1615)		
Seminar	Carol Lomonaco / Sherry Hu	The role of cloud-based communication on smart meter technology.		What the procedure to get the data and what people can do with the data. Sherry Hu can be a speaker. To find more speakers.
TBD	Carol Lomonaco	Strong password for BAS		
Seminar	David Blum/Sherry Hu / Xiwang Li	Foundation of building integration / Smart grid with energy storage and IoT		
Seminar Sponsored by TC 1.5	Carol Lomonaco	Cyber security red team	For Kansas City	TC 1.5 seeking for co-sponsoring
Seminar Sponsored by TC 7.6	Eric Yang	Existing building performance with occupant behavior based control	For Future	Seek co-sponsorship from 7.5

TBD	TBD	What data the lawyer would like to know –needs to define scope	In future	
Seminar	Carlos Haiad & Glenn Remington	Cyber Security on Building Systems	For Future	
Seminar	Peter Armstrong& Li Song	Building optimal / predictive control	For Future	
Seminar,co-sponsor TC 7.9	Li Song& Carol Lomonaco	How BAS can Enhance Existing Building Commissioning	For Future	
Seminar	Srinivas Katipamula	Improving Energy Efficiency of Commercial Buildings thru Data Analytics	For future	
Seminar	Armstrong	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	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	For future	The project has been done for a while

		from FDD implementation		
Seminar	Chris Kinney/Michael Munroe/Glenn Remington	FDD and Clouds?	For future	
Seminar	Jin Wen / Zheng O'Neil	Occupancy-based control sensor	For Future	To invite speakers
Seminar	Xiaohui Zhou/Srinivas Katipamula/Jin Wen	Open source platforms for HVAC,VOLTRON	For future	