Programs for the New York Meeting (January, 2014):

Seminar 25 (Intermediate)
Monday, January 20, 2014, 11:00 AM-12:00 PM

Effective Best Practices for Successful Building Systems Commissioning
Sponsor: *7.9 Building Commissioning*
Track: *Improving Building Performance through Commissioning, Operation and Maintenance*
Room: *Rendezvous Trianon*
Chair: *James Vallort, P.E., Member, Environmental Systems Design, Chicago, IL*

The concept of commissioning of buildings during new construction and renovation has grown across the globe in the past decade or so. This has paralleled the continued push toward improved designs for energy and water efficiency. Unfortunately, there has been less focus on helping to ensure that there is continued high performance after construction is complete. Monitoring Based Commissioning is presented as a solution. In addition, this seminar explains the testing, adjusting, and balancing functions, and describes the commissioning interface and cooperation with the balancing effort including review of specifications, qualifications, and reports.

Learning Objectives:

1. Argue how commissioning is a critical element in energy efficient buildings
2. Understand the role of commissioning in the building life cycle
3. Describe the commissioning activities associated with testing, adjusting, and balancing
4. Demonstrate the purpose of functional performance testing for sustainable operations
5. Develop an effective plan for monitoring based commissioning
6. Provide strategies for teamwork and coordination in the commissioning process..

1. The Application of Monitoring Based Commissioning to Building Systems
H. Jay Enck, Member, Commissioning & Green Build Solutions Inc., Buford, GA

Monitoring based commissioning relies on the use of extensive data monitoring and compilation, combined with analytical tools, to check the performance of building systems and provide notification of problems that occur and diagnostic tools to help identify the cause and solution(s) to those problems. This paper describes the development and application of monitoring based commissioning to a large university campus situation in the United States, and how these concepts can be applied to include issues such as fault detection and problem diagnostics of building systems.

2. Commissioning and Test, Adjust and Balance: A Team Activity
Gerald J. Kettler, P.E., Life Member, AIR Engineering and Testing, Dallas, TX

HVAC test, adjust and balance (TAB) and Commissioning (Cx) have related and similar objectives – a properly performing HVAC system. TAB precedes Cx in the construction process and must be understood by the Cx Provider. This program explains the TAB functions and describes the Cx interface and cooperation with TAB including review of specifications, qualifications, and reports.

AHR Expo Session 1 (Advanced)
Tuesday, January 21, 2014, 3:00 PM-4:00 PM

Trends in Building Energy Disclosure: Increasing Energy Efficiency without Retrofits
Sponsor: *7.9 Building Commissioning*
Track: *Tall Buildings: Performance Meets Policy*
Chair: *Mike Eardley, P.E., Member, Cannon Design, Boston, MA*

Energy efficiency has traditionally been achieved through physical retrofits, but in this seminar, an alternative approach is presented that harnesses data from smart meters and provides feedback to building occupants on their energy consumption. This seminar highlights the growing trend in energy disclosure policies and presents a new energy benchmarking model to support comparative energy performance evaluation across commercial buildings. This study analyzes patterns of energy consumption across New York City buildings and models the determinants of building energy efficiency.

Learning Objectives:

1. Understand patterns of energy consumption and drivers of energy efficiency in over 10,000 New York City buildings
2. Demonstrate various energy performance benchmarking methodologies and provide the critical elements of more accurate building-to-building comparisons
3. Develop an understanding of the shifting regulatory landscape around energy disclosure policies and recognize the potential of “big data” analytics and informatics to alter traditional investment and location decision models.
4. Demonstrate how eco-informatic systems and eco-feedback loops can be used to increase the performance of energy efficient buildings.
5. Provide empirical evidence on how social network dynamics can be utilized to encourage energy efficient behavior from building occupants.
6. Highlight new data-driven methods for predicting the energy consumption behavior of buildings using input from eco-informatic systems.

1. Building a Better Benchmark: Lessons From New York City's Local Law 84 Energy Disclosure Data
Constantine Kontokosta, Ph.D., P.E., NYU Center for Urban Science and Progress, New York, NY

This presentation describes a study that evaluates energy patterns in the New York City built environment using a dataset of energy consumption, physical, spatial, and occupancy

characteristics, collected from New York City's Local Law 84 energy disclosure database, the Primary Land Use Tax Lot Output (PLUTO) database, and CoStar Group data. It then presents the rationale and outcomes of a market-specific versus national energy rating system by comparing results of the U.S. Environmental Protection Agency (EPA) Energy Star rating tool using both the Commercial Building Energy Consumption Survey (CBECS) and New York City energy disclosure data as reference samples.

2. Encouraging Energy Efficient Behavior Of Building Occupants Through Contextualized Feedback and Social Network Dynamics

Rishee Jain, Ph.D., NYU Center for Urban Science and Progress, Brooklyn, NY

While building system retrofits can deliver substantial energy savings, they are often expensive and difficult to implement. An alternative is impacting occupant behavior by way of data collection and feedback. The presentation touches on the results of several empirical experiments that demonstrate how contextualizing feedback and leveraging social network dynamics in such systems can deliver substantial savings. The overview includes with how data from eco-informatic systems can be further utilized to drive other applications related to building energy performance, such as energy consumption forecasting.