

## Event Recap Building Enclosure Event - February 28, 2017

### Building Enclosure Event: BECx: Building Enclosure Commissioning – Growing Trends Toward Higher Energy Performance and Operation Excellence

Presented by: John Runkle, P.E., Vice President - Building Science Solutions, Interek - Architectural Testing, Inc.

**Article by: Michael DeRouin, CSI, CCCA |FitzGerald Associates Architects**

The CSI Chicago Chapter annual Building Enclosure event each February is a program that I look forward to each year. The outstanding speakers that have shared their expert knowledge over the years has set the bar for exceptional programs.

John Runkle's presentation centered around ensuring the integrity of the building enclosure in today's increasingly complex codes, building delivery processes, myriad of all new products, specialty trade contractors and sustainability requirements. Building Enclosure Commissioning is an important factor in allowing projects to achieve ultimate energy performance and to improve operation and maintenance. His presentation provided many case studies and lessons to showcase how the inclusion of a building enclosure commissioner would have alleviated many costly end results to the Owner. The typical scope of services provided by a commissioner including review of drawings, specs, submittals, and a strategized presence on site to inspect the work of the contractor.



Emphasis was put on the 'pre-design' consulting phase to work with the Owner to develop the Owner's Performance Objectives (OPO) and to work with the design team to evaluate design concepts against the OPO and the AOR's design intent. Clearly identifying what problems are trying to be solved with the facade up front appears to go a long way towards helping clients understand the issues entailed over and above the upfront façade line item costs. The fact that the façade is the major contributor to the overall energy performance of a building is still not widely understood outside of architectural circles. Being able to do even the most rudimentary energy modelling for various scenarios such as orientation, shading, percentage of glass, variations in glass composition and performance characteristics and many more variables can have a huge impact on the energy performance of the building.



During the early phases of design when establishing the OPO it's always important to understand your environment in which the building is located so that all the potential issues/hazards a building will experience can be evaluated and properly designed. In places such as the Middle East, design of the building envelope must withstand sand storms; while in tropical locations like Florida, the building envelope must be designed for salt water exposure and hurricanes.



The difficulty of the detailing should not drive the aesthetics of the building **Article continued on the next page...**

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### Building Enclosure Event - February 28, 2017 (cont.)

otherwise we would be limited to concrete boxes. A complex design aesthetic may give building enclosure consultants the shivers thinking about all the opportunities for moisture to invade, however the challenge to architects is to find constructible and verifiable means to detail those complex buildings. The design team must be cognizant of what lines are put on paper to create details that will be built in the field. Understanding how the entire system of parts works together to satisfy so many aligned and competing project requirements is necessary to prevent them from being misunderstood by the contractor building it. Coordination and attention to detail is key for a successful design.

The method for evaluating constructability and the desired built result lies in establishing performance criteria for the various elements and testing prior to installation. It's the way towards easing some of the pain we are experiencing on projects across the boards today.

John stressed that review of the project manual to include requirements for full scale material mockups of locations that are most susceptible to failure (i.e. openings, penetrations, etc.). He emphasized constructing and testing mockups that incorporate as many conditions in a single mockup as possible and avoiding in-place mockups when possible. The lingering knowledge from this year's Building Enclosure event was the value of unit mock-ups – if you are to employ any strategy or itemized scope of service for the sake of improving building envelope – it is to do full scale mock-ups. Runkle said, “if you have \$1 to spend, spend it on mock-ups”.



Thank you to our event sponsors for making this event possible for a 14th year!



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