

Session 3: 3-4:30 p.m.

Scott West - *The Convergence of Daylight Design and Modeling*

This session will cover the evolving art and science of daylighting design for commercial buildings. Daylighting in buildings involves the intersection of multiple building professionals: architects, interior designers, lighting designers, electrical engineers, energy modelers, commissioning agents and equipment and controls vendors. The presentation will include a discussion of daylighting metrics and the application of IES LM-83, the energy use impacts of daylighting in buildings, and how lighting design interacts with passive architectural design.

Kristof Irwin - *Integrated Mechanical Design & Project Delivery*

Mechanical system design and integration occupies a central role in delivering high quality conditioned space to our clients. A building's mechanical system can be viewed as health/comfort delivery engine that intervenes between varying ambient conditions and consistent conditions of high indoor environmental quality (IEQ). IEQ includes thermal comfort and indoor air quality (IAQ), plus occupancy impacts relating to sound, odor, light and vibration. Decisions relating to the enclosure and the integration of mechanical systems either create or prevent high IEQ. As an industry responsible for delivering conditioned space, we are not limited by technological factors; we are not waiting for new breakthroughs in materials or systems. Instead, the time is here for the balance of power to shift from low first cost to high long-term value to society, and ourselves - as the primary/underlying motivating factor for our decisions.

Jill Kurtz and William Braham - *Beyond Net-Zero: Designing the Renewable City and Region using Big Data*

This presentation reviews the results of a simplified method for reconfiguring a small city and rural county to support its current population on the environmental energies available within the boundaries of the county. It is configured as a game, based on the simplifying assumption that the collection and concentration of renewable energies is almost entirely a matter of surface or land area, so that a renewable economy becomes a matter of competing land uses, of tradeoffs between land used for the production of food, fuel, electricity, and other uses. E[m]ergy accounting, the memory of energy, and big data collection methods were used to translate different forms of consumption into equivalent land areas.

Pliny Fisk - *Texas as a Canary for Climate Change*

FEMA shows Texas with more categories and intense disasters related to climate change than any other state in the US, creating the highest loss in revenue. This presentation has ten maps of the areas most likely to be impacted and demonstrates both nationally and internationally where this impact could occur, giving the steps we take national and international importance. Proposed solutions in design, materials, and engineering at both the building and the neighborhood scale will be presented from the standpoint of superstructure and infrastructure. The latter is demonstrated with a new micro grid design that protects infrastructure resources.

Jonathan Baron and Sandra Bauder - *Basic Building Science – A Prerequisite for Sustainable Design*

Building envelopes are a key component in achieving Sustainable Design. Sustainable strategies can be undermined by a leaky, mold and condensation prone wall or roof

system. At best, a bad wall can force an increased use of energy for heating and cooling. At worst, a bad wall can pose a threat to human comfort and health. A foundational understanding of the science of how walls work is necessary to ensure successful performance. By understanding how heat, moisture and air move through walls, architects can avoid risky enclosure designs. From this knowledge, sustainable strategies can be effectively used to create buildings that improve our human environment.

Cory Duggin - *Ignorant Glass Boxes: Glazing Impact on Energy and Occupant Comfort*

Cory will show visual simulations that illustrate the consequences of designing an entirely curtain wall building. Curtain walls allow for a beautiful design aesthetic with uninterrupted views, but the effect on energy and comfort must be considered. Glazed spaces can be high performance and comfortable when those variables are part of the design.

Joe Fong - *Ways to Enhance your Building Enclosure for Energy, Environment, & Operations*

Building enclosure is part of the integrated system which is connected to structure, interior, and services that can influence the building performance holistically. The use of building simulation tools can enhance the early design decisions for risk identification, optimization, and cost analysis. This presentation will provide the scientific approach on the enclosure performance related to the energy reduction, environmental impact, and maintenance and operations. Participants will be able to select over 10 appropriate building performance simulation tools in terms of daylighting, energy usage, thermal bridging, condensation, and thermal comfort during different design stages.

Wendy Heger and elected officials- *State of the Gulf Coast: Advocacy in the Current Political Climate*

Wendy will moderate a discussion with elected officials regarding advocacy opportunities at the local, regional, and state levels. Focus will be on issues of sustainability, resiliency, and citizen engagement.

Tristan Roberts and Jennifer Preston - *Hacking Your Design Process to Bust Inertia*

The client just cares about cost. The principal isn't really interested in integration. Half the project team has bought into sustainability and health goals... and half hasn't. We hear the same complaints from even the most progressive designers year after year. Ugh... inertia. In this session we'll share novel tools to hack your design process to get the results you really want. Not just another session about integrated design ("won't work here"), you'll go home with specific, easy, fun, collaborative, momentum-building wins for your practice.