

# 9th Annual USGBC Texas Energy Summit Presented by the Texas Gulf Coast Region

### Thursday, October 17, 2019



**Event Program sponsored by** 



### **WELCOME!**

#### **Letter from Jonathan Kraatz**



On behalf of the USGBC Texas Chapter, welcome to the 2019 USGBC Texas Energy Summit.

This year, the Energy Summit Committee has put together a great lineup of Keynote Speakers and Presenters that demonstrates how we, as an organization, are transforming the way commercial buildings, homes and communities are designed, built, maintained and operated in Texas.

I look forward to hearing from both our Keynote Speakers about how sustainable building and business practices are benefiting not only energy (and water) savings, but also the bottom line. In addition, we will learn about new tools that are available as well as the launch of a new USGBC Texas initiative around building operations best practices.

Thank you for joining us to complete the mission.

Jonathan Kraatz, USGBC Texas, Executive Director

#### **Letter from Andre Lehr**



Welcome to the 9th Annual USGBC Energy Summit presented by the USGBC Texas Chapter. We are excited to provide this year's lineup of speakers. We want our program to cover many important topics for your benefit this year.

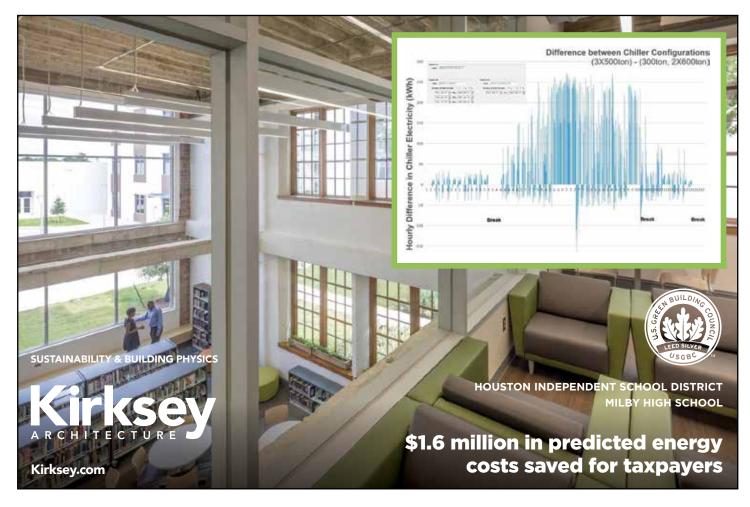
Our educational presentations include: High Performance Designs, Indoor Environment, Central Plant Energy Efficiency as well as Resilience and Smart Tech. We're kicking our day off with an inspirational Keynote Speaker from San Antonio, Steve Hennigan, who is changing the way buildings are viewed by focusing on a much further vision than the normal short-term view mandated by the past. We have wonderful insightful learning sessions throughout the day including our lunch Keynote Speaker, Mahesh Ramanujam, who will give us perspective on where the USGBC is headed and how fast we will travel to get there. Then we will wrap the day with drinks and a panel of professionals on the topic of Resiliency in Houston. The momentum is unstoppable at this point and we can't wait to enjoy this exciting conference with all our friends and collegues. See you in the main ballroom, I'll be the one drinking coffee...

Please enjoy the program today and stay around for the networking session afterwards. We'd love to get to know our Energy Efficiency Steward Community better, and there's no better time to do it!



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#### **ENERGY SUMMIT COMMITTEE**

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# 8:30 AM to 9:40 AM BREAKFAST KEYNOTE SPEAKER

STEVE HENNIGAN
PRESIDENT AND CEO
CREDIT HUMAN

Credit Human Federal Credit Union is carrying out its dedication to sustainability through construction of its new 10-story headquarters in San Antonio. Steve Hennigan, president and CEO of Credit Human, said that because he comes from a background in banking, rather than a background in real estate, he adopted a "different perspective and paradigm" in planning the building in order to challenge engineers and others involved in constructing the project. As such, Hennigan urged those assembling the project to base their work not on current best practices but on what was "theoretically possible" for a building that is good for the environment, the people in it, and the community. His stance was this: "Give me a reason why it can't be done."

The headquarters, which is under construction and scheduled for completion in 2020, adheres to Hennigan's philosophy creating both a culture for this project as well as addressing the required culture shift for Credit Human employees. He said the 200,000-square-foot building will consume 46 percent less energy versus a comparable new building and 97 percent less water making it one of (if not the) greenest buildings in Texas.

One of the ways that this has been achieved is by taking a long-term view of the building, with Hennigan noting that Credit Human has occupied its current headquarters for more than 40 years. "We have a history of buying and holding things," he said, "and so that allowed us to break through the conventions that we have to make these things work within five or six years."

In looking at the building through a long-term lens, Hennigan said that he and others addressed the demand for resources before examining the supply side. Sticking with that policy, they initially weighed elements affecting the performance of the building envelope—elements, he said, that will be "quantum in their payoff."

In coupling the supply and demand dynamics, the headquarters will, according to Hennigan:

- Rely on solar energy for about 70 percent of the building's power, thanks to a 1-megawatt rooftop system
- Decrease water consumption through the installation of a 150-well geothermal network to cut the evaporation effect by lowering the number of cooling towers that are required
- Produce a continuous flow of hot water via the geothermal loop
- Not depend on any fossil fuel, since the building will lack boilers

A key concept in this entire design process is the HUMAN Element. It was critically important to understand how the building will interact and function with its inhabitants and users—employees and customers. The needs of the staff and their productivity were considered in all aspects of design with specific emphasis on increasing productivity and well-being.

Hennigan's message is simple. No matter what lens the Credit Human building is viewed through, it makes sense for these reasons: financially (Credit Human IS a financial institution); productivity and well-being of employees; environmentally (the building is close to water, waste and carbon-neutral); community (local street improvements, educational opportunities and air/water quality) and industry (buildings like this can be built in Texas, and they are affordable).

### 9:50 - 10:40 TRACKS

### 9:50 AM to 10:40 AM

#### **HIGH PERFORMANCE DESIGN TRACK**



#### **DOUBLE THE FUN WITH LEED AND WELL**

Presented by Tricia Loe, WELL AP, LEED AP BD+C, LEED AP ID+C, Sustainable Concepts, LLC and Gary Gene Olp, FAIA, LEED Fellow, GGO Architects



What happens when you pursue both LEED green building certification and WELL Building Standard certification on the same building? Does it make the process twice as easy? Or twice as hard? This presentation will present a case study of a coworking space, built in a renovated warehouse in The Cedars area near downtown Dallas. Participants will hear about the successes and challenges of working on LEED and WELL, and how to work on a project that encompasses these two building rating systems.

#### **RESILIENCE AND SMART TECH TRACK**

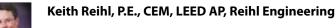


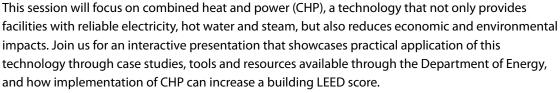
#### COMBINED HEAT AND POWER (CHP), RESILIENCE AND LEED

Presented by Carlos Gamarra, P.E., CEM, Department of Energy Combined Heat and Power Technical Assistance Partnership, Ben Edgar, White Harvest Energy, and

Keith Reibl, P.E., CEM, LEED AP, Reibl, Engineering









#### **CENTRAL PLANT ENERGY EFFICIENCY TRACK**



### OVERCOMING CHALLENGES TO CENTRAL PLANT AUTOMATION AND OPTIMIZATION Presented by Greg Norris and Pouyan Layegh, MD Anderson Cancer Center



UT MD Anderson Cancer Center operates eight distinct and submetered building areas, most of which house mission critical laboratory space. These facilities are served by four chilled water plants totaling 12,800 ton in capacity. After previously unsuccessful attempts at automating as an integrated system, the plants were operated reliably at the individual plant level for many years. This session reviews the collaborative efforts of operations, energy management, engineering, building automation and vendor partners to translate critical operation knowledge to an automated controls system. The effort evolved from monitoring operation for efficiency recommendations to improving equipment, replacing sequences, optimizing operation and ultimately providing completely automated integrated plant controls.

#### INDOOR ENVIRONMENT TRACK



### LEVERAGING ENERGY AND FINANCIAL ANALYSIS IN ROOFING SYSTEMS Presented by Rich Crawford, Tremco

Utilizing energy and financial analysis to help compare roof systems and roof restorations. We will dive into various topics: wet insulation, optimal R-value, dewpoint, heating penalty vs cooling savings, landfill division and CO2 offset calculations as well as roof-to-wall air sealing.

### 11:00 AM to 11:50 AM

#### **HIGH PERFORMANCE DESIGN TRACK**



### VARIABLE REFRIGERANT SYSTEMS-OPPORTUNITIES AND CHALLENGES (Q&A PANEL)



Presented by Aly Valiani, New Horizons Hospitality, Steve Jones, Mitsubishi Electric Trane and Kapil Upadhyaya, Kirksey Architecture



The hospitality industry is ever-evolving, and owners are continuously looking for energy efficient technologies to improve operation and maintenance. Although variable refrigerant systems have been around for a while, these have lately become popular in the hospitality industry. Kapil Upadhyaya will moderate this session starting with an introduction to energy efficiency measures being used in the hospitality industry. Steve Jones will provide an overview of various types of fan coil units and condensing units that are available under the umbrella of variable refrigerant systems. Lastly, Mr. Valiani will share his experience with installation and operation of variable refrigerant systems on one of his LEED certified properties: Hilton Garden Inn on 290/Beltway. The presentations will be followed by questions about challenges and opportunities posed by variable refrigerant systems, including audience questions.

#### **RESILIENCE AND SMART TECH TRACK**



#### **DISRUPTION OF THE UTILITY GRID**

Presented by Jonathan Wilson, Schneider Electric Energy & Sustainability Services

How, after decades without change, the utility grid is ripe for disruption by buzzwords that include global digitization, distributed energy resources and blockchain technology.

#### **CENTRAL PLANT ENERGY EFFICIENCY TRACK**



### UT AUSTIN-EFFICIENCY AND RELIABILITY OF A DISTRICT ENERGY SYSTEM Presented by Roberto Del Real, University of Texas at Austin

The University of Texas at the Austin Campus has been growing at an average of 2% in the last 15 years. Despite this growth, high levels of reliability and increased efficiencies are achieved via the Campus DES load management system. This session describes UT Austin DES components, network and control functions that make this system unique in achieving those efficiency and reliability levels and not dependent on the Texas grid. It also covers achievement of the first DES PEER certification.

#### INDOOR ENVIRONMENT TRACK



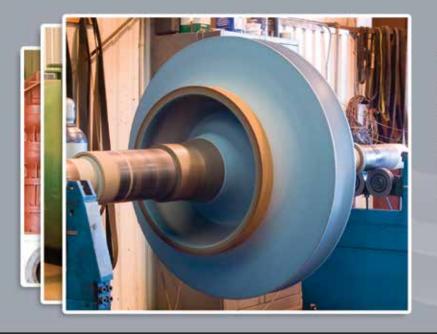
#### HOW TO MAXIMIZE YOUR TENANTS' BUSINESS SUCCESS

Presented by David MacLean, McMac Cx

All building owners want to attract the very best tenants. All tenants want to maximize their business's success. The President of McMac Cx and Chair of the USGBC Texas Sustainable Best Practice Leaders Committee will explore modeling and analysis tools developed to capture the direct-cost-benefit connection between well-managed buildings and tenant employee health, productivity, absenteeism, retention and happiness. You will learn how to use economically and easily deployable technology to create a transparent work environment where facility management teams are valued by building occupants as key partners in their business's success.



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NOON to 1:10 PM

LUNCHEON KEYNOTE SPEAKER

MAHESH RAMANUJAM

PRESIDENT AND CEO

U.S. GREEN BUILDING COUNCIL (USGBC) AND

GREEN BUSINESS CERTIFICATION, INC. (GBCI)

Mahesh Ramanujam is proving that building a more sustainable world is no longer a dream, but a global evolution. As president and CEO of the U.S. Green Building Council (USGBC) and Green Business Certification, Inc. (GBCI), he leads a community of 13 million people that's growing every day.

A graduate from India's Annamalai University with a degree in Computer Engineering, Ramanujam couples a strong background in technology and innovation with his goal of building healthier communities and democratizing sustainable living.

Ramanujam serves on numerous boards and advisory committees, including Bank of America's National Community Advisory Council and the Board of Directors of GRESB, a private organization wholly owned by GBCI and that is the leading sustainability standard for global real estate portfolios and infrastructure assets.

#### **LUNCHEON PRESENTATION**

#### LEED and PEER: Scaling up Sustainable, Reliable and Resilient Energy Systems

It is critical to provide accessible, affordable and reliable energy in order to improve quality of life here and around the globe. Ramanujam will demonstrate how USGBC's effort help achieve these goals as well as outline his vision for sustainable, reliable and resilient energy systems now and in the future. He will also cover how USGBC is working to deliver this vision through LEED and PEER, and how LEED and PEER – and specifically LEED O+M – are moving this forward.

### 1:30 - 2:20 TRACKS

### 1:30 PM to 2:20 PM

#### **HIGH PERFORMANCE DESIGN TRACK**



### BUILDING SUSTAINABILITY: OWNER, DESIGNER AND TENANT PERSPECTIVES Presented by Maria Perez, Gensler and Sarah King, Skanska USA Commercial Development



To drive meaningful sustainability progress requires a common vision and collaboration between the building owner, design team, contractor, property management and building tenants. The panel highlights the owner/developer, architect and tenant perspectives on a recently completed Skanska Commercial Development office project in Houston. Bank of America Tower is the first LEED v4 Core and Shell Platinum certified project in the United States, and at 780,000 sf is the largest in the world to date. The team re-examined the use of traditional products and building assemblies, and identified innovative technologies or system alternatives that offer significantly improved environmental performance. LEED, Fitwel, AIA 2030 Challenge and Energy Star also provided frameworks by which to measure progress.

#### RESILIENCE AND SMART TECH TRACK



# FLOOD MITIGATION AND RESPONSE-Houston Methodist and Humble ISD Presented by Nolan Correa, Humble ISD, Melissa Crizer, Humble ISD and Bruce Flaniken, The Methodist Hospital





High density rainfall and flooding have become a recurring phenomenon in our region and the damage that is caused must be evaluated, while making our facilities more resilient. An increasing number of Gulf Coast American Hospital facilities are turning to District Energy via Cogeneration and evaluating the benefits of multi-faceted District Energy system. This session will examine the costs and benefits of "getting into catastrophic disaster planning and mitigation" and will incorporate the lessons learned by Houston Methodist from a decade of surviving catastrophic events. Humble ISD will present their experience with recovery efforts following Hurricane Harvey and what they have done since to minimize damage in future flood events. Specific challenges in Humble area will be discussed that in turn need effort beyond standard recovery plans.

#### **CENTRAL PLANT ENERGY EFFICIENCY TRACK**



### DISTRICT HEATING AND COOLING Presented by Rajesh Sinha, Thermax Inc.

Absorbers can be used in a variety of ways for district heating and cooling. Thermax is a global company and has such installations globally. Educative case studies will be presented which will be useful for people from the sector to adopt and apply the technology gainfully.

#### INDOOR ENVIRONMENT TRACK



### FIGHTING AND WINNING THE BATTLE AGAINST MOLD, MILDEW, VIRUSES AND BACTERIA IN OUR BUILDINGS

Presented by Alton Holt, CIMR Tech

Advances in technology are such that mold can be remediated without removing sheetrock or carpeting. Viruses and bacteria can be safely eliminated 24/7/365. We will explore the various technologies used to attempt to keep our buildings free from these harmful contaminants, and provide new solutions to a longstanding problem. See how healthy buildings lead to improved attendance, performance and success for owners and its occupants.

### 2:40 PM to 3:30 PM

#### HIGH PERFORMANCE DESIGN TRACK



#### **NET ZERO HOSPITALS-A PATH FORWARD**

#### Presented by Jim Crabb, Mazzetti

Acute-care hospitals are energy intensive. High ventilation rates required by code lead to high cooling loads and reheat. Medical equipment, steam sterilization and high expectations for thermal comfort add to the difficulty of achieving net zero. As codes change and technology improves, maybe the hospital of the future can be NZE (Net Zero Energy), but what about the hospitals we're building today? Are they to become fossils of the early 21st century? In a recent design challenge, Mazzetti engineers developed a strategy that balances the reality of today's codes and technology with a vision for a hospital that can adapt to a changing regulatory and technology climate.

#### **RESILIENCE AND SMART TECH TRACK**



### DATA: THE TRUE ASSET OF BUILDINGS-PORTFOLIO OPTIMIZATION AND CYBERSECURITY VIA HONEYWELL FORGE

Presented by Richard Crounse, Honeywell Connected Enterprise

Our smart building solutions offer tools for visibility and optimization across your entire portfolio, freeing you up to focus on the bigger picture—from using space efficiently to selecting the right capital projects in which to invest. Data is like any other asset; it needs to be protected. Cybersecurity is a shared responsibility, and we provide assessments to help with its unique challenges.

#### CENTRAL PLANT ENERGY EFFICIENCY TRACK



#### ADVANCED DATA ANALYTICS FOR CENTRAL PLANT EFFICIENCY

Presented by Keith La Rose, CopperTree Analytics Inc

The amount of data produced by central plant systems is enormous. Generally speaking, that data is used for the ongoing and real-time operation of the plant, leaving most of that valuable data to go unused, at least not to its full potential. Advances in data analytics software technologies in recent years allow us to ingest hundreds, or even thousands, of data points from a plant and its downstream equipment in real-time to analyze the plant's operation in a way that was never possible in the past. Algorithms applied to that data are far more effective than a human operator or engineer at finding faults and inefficiencies. Real-world examples of project results and experiences will be presented highlighting how these technologies work, and what benefit they can provide in buildings.

#### INDOOR ENVIRONMENT TRACK



### HOW UV-C CAN REDUCE HVAC ENERGY, MAINTENANCE COSTS AND IMPROVE IAQ Presented by Dean Saputa, UV Resources

What is UV-C energy and how is it produced? UV-C has been used for nearly 100 years to destroy microorganisms in water on surfaces and in air. We will illustrate how UV-C is currently used to provide a "Green" non-chemical method of stripping dirt and grime from coil and drain pan surfaces without residue. Case studies will be provided along with the simple methods used to validate their aging HVAC systems' return to near new performance. Discussion of current standards and guidelines within ASHRAE, UL and ISO will be presented.



# RESET Air | APTRAINING



### FRIDAY, OCTOBER 25, 2019

**Location:** Kirksey Architects | 6909 Portwest Drive, Houston, TX, 77024

- For further details, and to register for the RESET
  Air Standard Introduction to RESET Air &
  Discussion Forum (One Hour AIA HSW CES / USGBC
  CEU), visit https://usgbctexas.org/event-3572211
- For further details, and to register for the RESET
  Air Standard Accredited Professional Intensive
  Training and Exam (Four Hours AIA HSW CES /
  USGBC CEU), visit https://reset.build/blogs/173



### THE EFFICIENCY-RESILIENCE INTERCONNECTION:

#### **Linking Energy Efficiciency and Community Resilience**

Cities, companies and citizens across this region are facing increasing risks that include extreme weather, aging infrastructure and economic uncertainty. The connection between energy efficiency and resource resilience goes beyond keeping the lights on and our homes cool. Join us for a dynamic conversation with local subject matter experts as we explore opportunities to integrate energy efficiency into resilience strategies and create resource resilient communities.

3:45 PM to 4:45 PM Panel Discussion

#### **MEET THE PANELISTS**



Cindy Villarreal, AIA, LEED AP, WELL AP, RELI AP Project Architect Perkins + Will



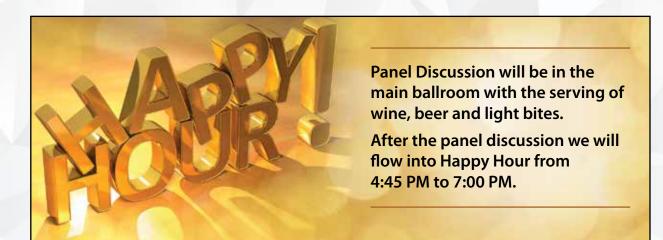
Marissa Aho, AICP Chief Resilience Officer City of Houston



James Vasquez
Senior Sales Executive
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MODERATED BY:
Gavin Dillingham, PhD
Director, Clean Energy Policy
HARC



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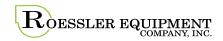












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**HOPE TO SEE ALL OF YOU IN OCTOBER 2020!** 

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