ASHRAE Kansas City Chapter

April 2023 Breeze

Student Night & Tour
Aspira Campus - Chiller Plant Tour

Monday, May 1st 2023

5:30 PM Check-In / Networking
5:50 PM Announcements
6:00 PM Presentation

Aspira Campus
6130 Sprint Parkway
Overland Park, KS 66211

RSVP at https://www.kcashrae.org/

Deadline: Midnight April 26th
$25 = Online before deadline
$30 = after RSVP deadline
*If you haven't prepaid for a meeting, you are **required to pay cash or check at the door**. Invoicing is not an option.
No show will not be refunded
PDH Available
Boxed Lunches & Refreshments provided!

President's Message

Time to get out of the Office

For those who like warmer weather for getting out of the office, the time has arrived.

We are planning to get in the building tour that didn't come together in March. This provides an opportunity to get out of the office and off the screen and see the systems we design in person. Come see your fellow ASHRAE members, learn more about HVAC installations or share your knowledge of HVAC with your fellow tour takers.

Many would say our greatest opportunity to get out of the office is our annual golf tournament which is scheduled for Friday May 19th. This is a fundraiser for our chapter scholarships and to support our Research Promotion campaign.

For all you non-golfers out there feeling left out of the golf tournament where it seems everybody gets to see everybody, Diversity in ASHRAE is offering another opportunity to get together, no golf skills or interest required, on May 9th. There will be an opportunity to do some painting while gathering with fellow ASHRAE members, but no painting skills or interest is required. This is another opportunity to be part of a gathering of HVAC&R professionals.

Young Engineers in ASHRAE (YEA) is also planning spring and summer events and enjoying time out of the office.

Thank you to everyone for participating in the chapter elections. If you have any questions, my contact information is at the end of the newsletter.

Amy Stadler
KC Chapter President 2022-23

Publication of the Kansas City Chapter of the American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.
This newsletter is a publication of the chapter and not the Society
Newsletter Editor: Alan Sparling (asparling@p1-service.com) http://www.kcashrae.org/

ASHRAE Kansas City Chapter

May Meeting - Tour

Aspiria Campus
6130 Sprint Pkwy
Overland Park, KS 66211

Monday, May 1st
5:30 Check-In/Networking
5:50 Announcements
6:00 Tour/Presentation

Register at www.kcashrae.org.
Registration includes dinner.
In-Person Cost: $25 if registered by April 26th, $30 after.

Aspiria Campus - Chiller Plant Tour

Tour the Aspiria Campus Chiller Plant. This approx. 8,000 Ton plant houses concrete cooling towers, massive generators, large variable speed chillers, and underground piping for the entire campus.

Please keep a look out for more information on what building to meet. We will meet on the campus and walk over to the plant in smaller groups.

STUDENT NIGHT!

Help us welcome local university students at the meeting.

Membership Promotion

The Kansas City Chapter Membership Promotions committee and the Board of Governors would like to welcome this month's new ASHRAE members. Please do not hesitate to reach out to any one listed above in regards to maximizing your membership. Remember to invite your peers and coworkers to our monthly lunch meetings and give ASHRAE a shot, you never know!

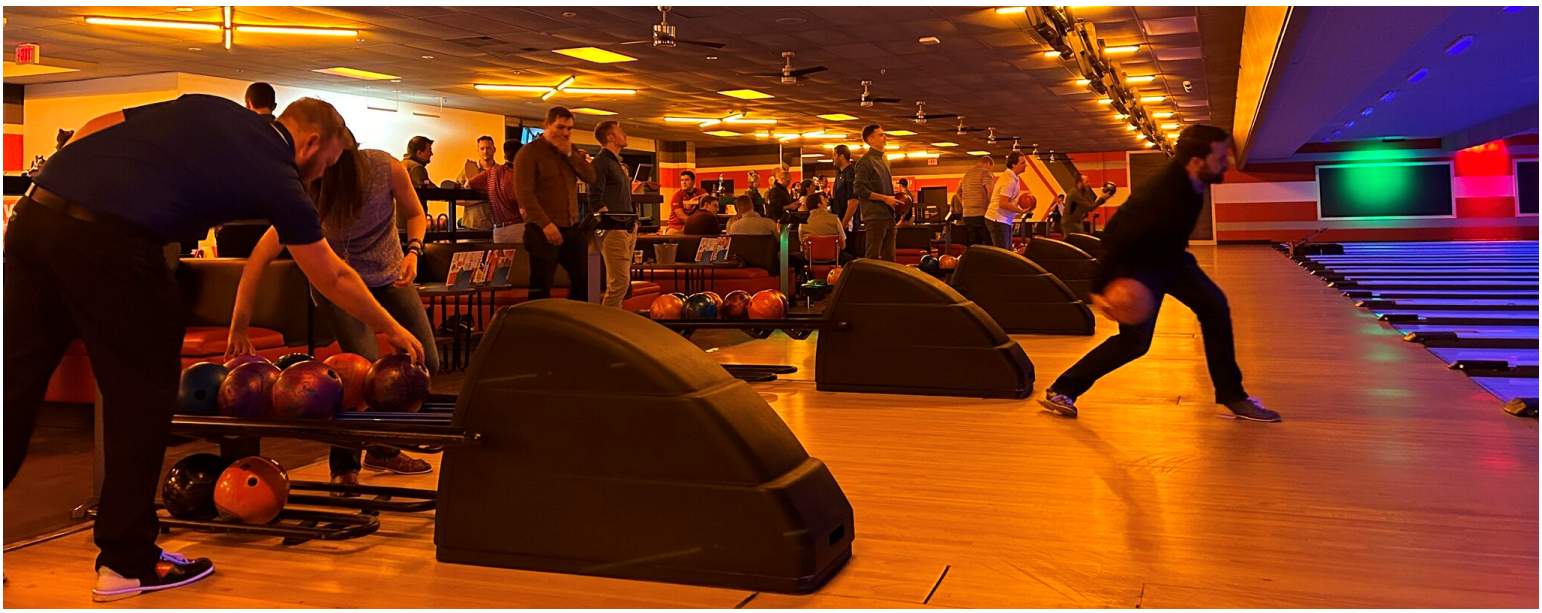
- Kevin Walbridge
- Noah Aziere
- Robb D. Palmer
- Owen Xavier Stuckwisch

WELCOME!!

Young Engineers In ASHRAE (YEA)

In recent years the local YEA group in the Kansas City Chapter has generated a lot of activity and new involvement in the chapter. One of those initiatives this year was to focus on opening events up to the non-traditional networking in the industry… GOLF! Of course, most of us love to grab a quick round whenever possible, but you'll see new faces and what a great time the group had hosting a chapter bowling event this year. In strong fashion they were also able to coordinate a tour of GEHA Field at Arrowhead Stadium.
If anyone is interested in attending future events or getting involved at YEA, please reach out to Ryan Mustain or Joe Reed. Contact info can be locate on the back directory,

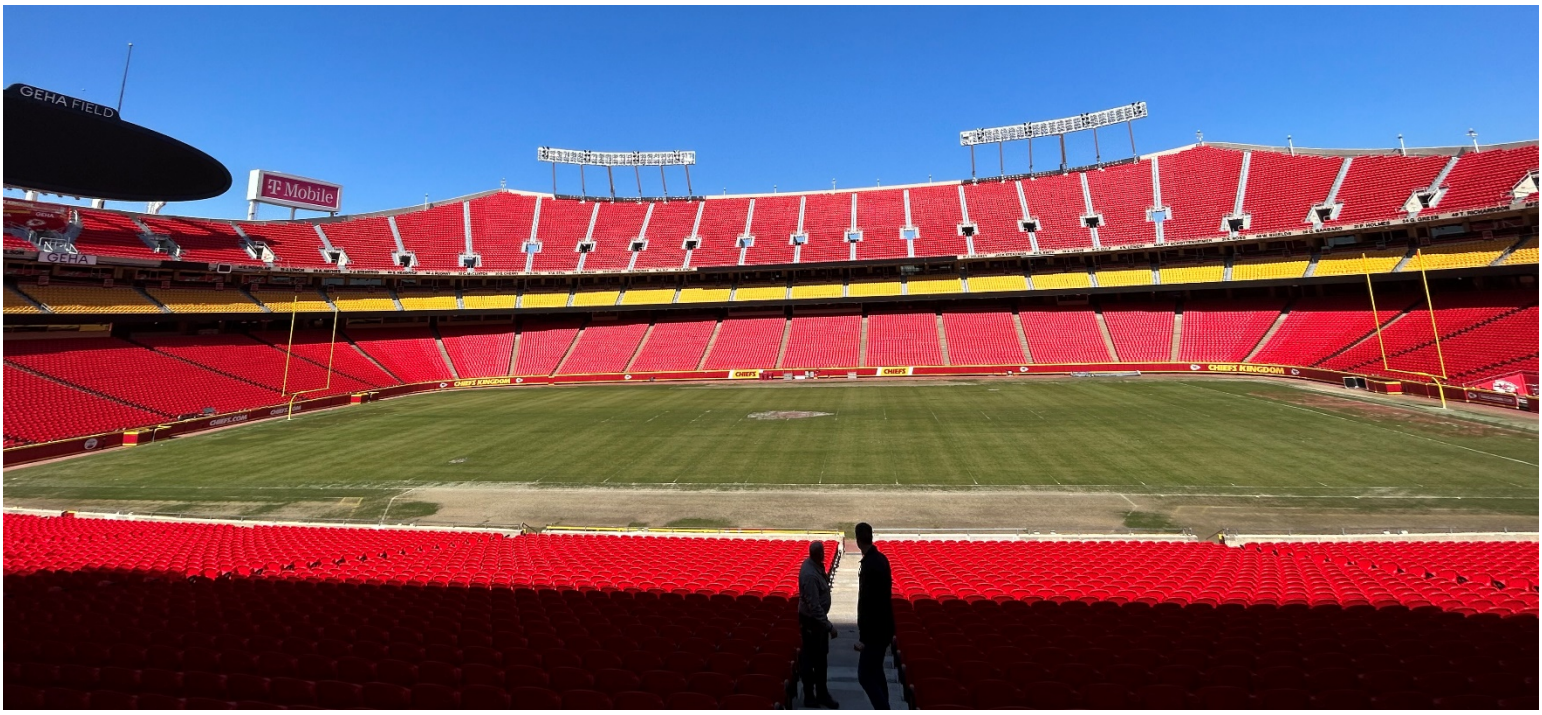
"#YEA decided to cater to the non-golf crowd with some good ole fashion bowling. Based on the pictures you'll see it was a hit! Thank you too all our lane sponsors, Joe Reed, Bobby Caffrey & Tucker Hewitt in the words of Kevin Durant 'you're the real MVPs.' "

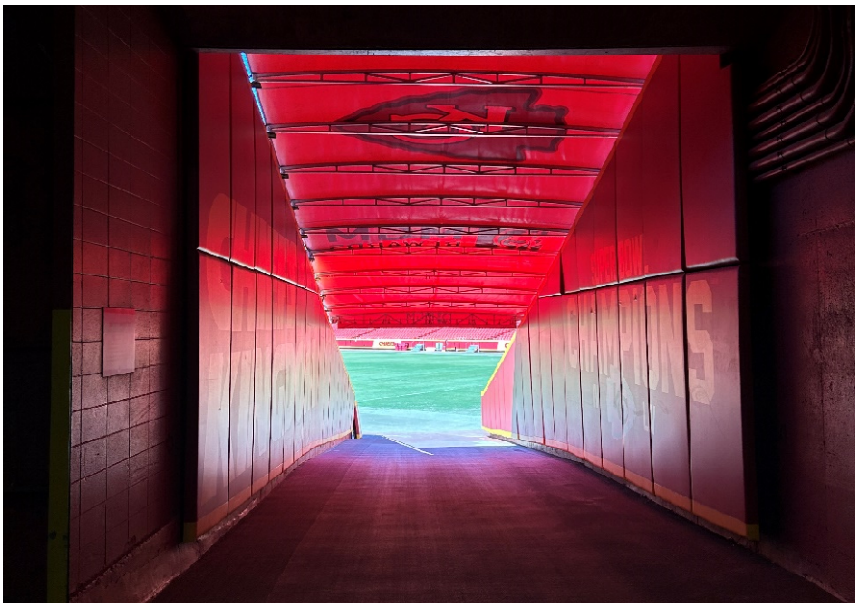


"#YEA had the opportunity (of a lifetime) to tour GEHA Field at Arrowhead Stadium . It's where the Super Bowl champion Kansas City Chiefs play. Big thanks to our tour speaker Eric Woster & Swapnil Shende for putting the tour altogether. If you are looking to get involved in the engineering community YEA is for you!"


PATRICK
MAHOMES
15
MAHOMES
15


HOME OF THE
CHIEFS!


GEHA FIELD
T-Mobile
GEHA
CHIEFS KINGDOM



ASHRAE Kansas City Chapter

ASHRAE DEI
Spring Paint & Sip

May 9th, 2023, from 6-9pm
Location TBD

Stay to paint or stop by to mingle!

Beverages and snacks provided.

Email to kphelps@dlrgroup.com for questions, RSVP, and beverage requests!

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MAY 17, 2023 | UNION STATION

EDUCATION
NOON -2:00PM
TRADE SHOW
2:00-5:00PM

CREW KANSAS CITY

CENTRAL PLAINS

Government Affairs

General News

May is Building Safety Month

Building Safety Month, which runs throughout May, is a campaign to raise awareness about building safety. The campaign emphasizes the importance of modern, up-to-date building codes and standards, with each week in May having a different theme to encompass the multifaceted nature of building safety.

- May 1st – 7th is "Building Safety Starts at Home"
- May 8th – 14th is "Building Safety Professionals and You"
- May 15th – 21st is "Prepare your Community"
- May 22nd – 28th is "Advocate for your Community"
- May 29th – 31st is "Solving Challenges Together"

National News Updates

EIA Forecasts Drop in Energy-Related Carbon Emissions

The U.S. Energy Information Administration (EIA) released its **2023 annual energy outlook**, including a forecast that U.S. energy-related CO2 emissions have the potential to drop by up to 38 percent by 2030 when compared to 2005 levels. The report attributes the potential progress to increased deployment of renewable energy coupled with increased electrification and more energy efficient equipment. Angelina LaRose, EIA assistant administrator for energy analysis, cited the Inflation Reduction Act (IRA) as a contributing factor to at least 10 percent of the reduction predicted in the 2030 reference case. The EIA also predicts that while there is no significant change to domestic consumption of petroleum and natural gas, production of these fuel sources is expected to remain highly active to sate the international demand.

2023 National Energy Codes Conference in Chicago, May 2nd

This year's Department of Energy's **National Energy Codes Conference** will be in Chicago, Illinois on May 2nd to the 4th. Attendees will have the opportunity to learn about the latest energy code advancements, participate in discussions, and use their knowledge to inform the future of efficient and resilient building energy codes. The conference could be useful to several attendees including building officials, homebuilders, energy officers, trade associations, policymakers, and code/standard developers. Topics in the program include offerings such as workshops on decarbonization, and informational sessions on the latest IECC and 90.1 code development cycles.

International News Updates

U.K. to Label Nuclear Power as "Green"

In an attempt to increase capital investment, the U.K. will label nuclear energy as "environmentally sustainable," echoing a similar 2022 decision by the E.U. to label both nuclear and natural gas as green technologies. The new classification for nuclear means it will be included in the green-investing rulebook, a guide for investors to reliably identify opportunities to invest in 'green' areas of the economy. Further, the classification will give nuclear power access to the same incentives presently available for renewable energy, just as the U.K. released $248 million in new investments for renewable energy projects. The U.K. sees nuclear energy as essential to reaching a net-zero carbon status and the hope is that the new classification will boost the sector enough to meet the government's goal of approving eight new reactor projects by the end of the decade.

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sources:GovAffairs@ashrae.org

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- Jorban Riscoe

$500+

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- Brack & Associates
- SMACNA – Kansas City
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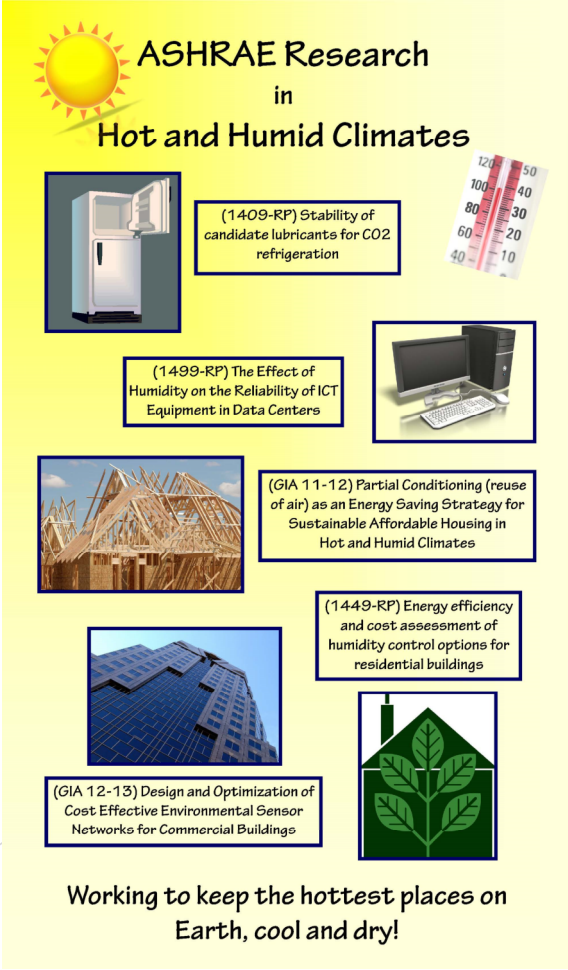

Thanks for your donations!

2022-2023 Top Individual Sponsors

Top Donors:

- Amy Stadler
- Kevin Juhl
- Trevor Jones
- Blake Ellis

Donors:

- Andrea Phillips
- Frank Schroer
- Stuart Braden
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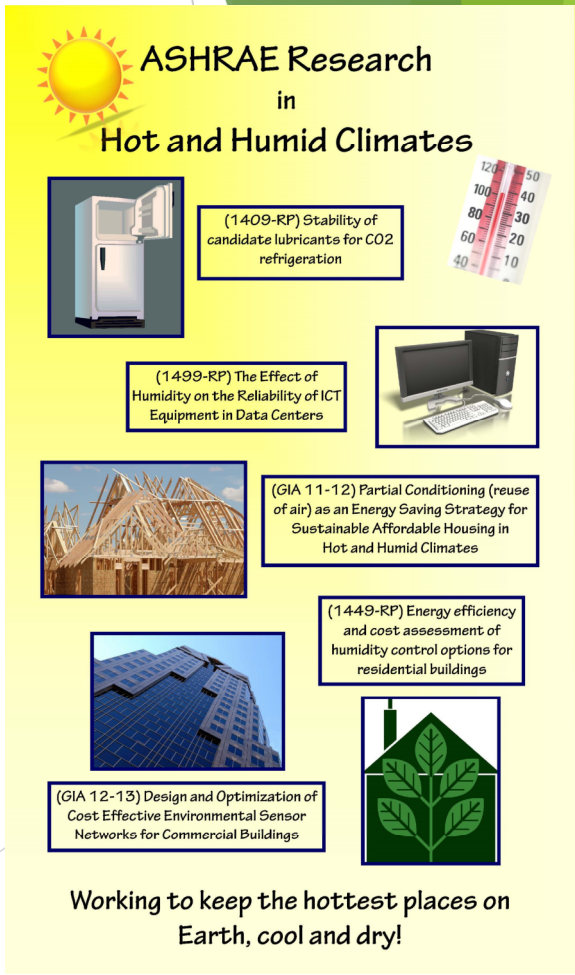

Thanks for your donations!

Sustainability

HVAC&R Engineers Contribution to Sustainability and Relationship to Scope Level Emissions

The 2022-2023 Kansas City ASHRAE Chapter is nearing a conclusion. Therefore, since our time is short the intent of this article is to briefly cover two related themes. The first part builds on a previous article covering sustainability measures at an active project, the LaPorte Civic Auditorium in LaPorte, Indiana. This first part is meant to inspire Chapter members to think about the sustainable impacts they are designing, building, or supplying into projects and to consider sharing those impacts with the Chapter by contributing to a future database being created by the Sustainability Committee. The second part of this article introduces how the work ASHRAE members provide in the sustainability arena contributes to the broader topic of climate change and the mitigation strategy of greenhouse gas emissions reduction.

According to the *Sustainability* chapter (Chapter 35) of the 2021 ASHRAE Fundamentals Handbook, the primary areas in sustainable design that fall within ASHRAE's purview on most projects are those dealing with energy and water use, material resources, air and water pollution, and waste disposal. Surprisingly since buildings are constructed for people and people spend 90% of their lives indoors, indoor environmental quality was not identified by ASHRAE as a primary area of consideration. In addition, other secondary facets of sustainable design where ASHRAE could exert influence, but were also not identified, include resiliency and digitalization. So, what are examples of sustainable ideas within the context of these primary and secondary considerations?

Energy and Water Use

- Achieving decarbonization through electrification using renewable energy resources
- Capturing and reusing cooling condensate as make-up water for cooling systems requiring make-up

Material Resources

- Considerations in existing buildings – reducing waste in new materials, reusing (refurbishing) existing components instead of complete replacement, recycling existing components for use elsewhere
- Material management - local or regional availability of equipment and materials and skilled labor

Air and Water Pollution

- Within the context of a building, location of source emitters (truck loading docks, flue stacks) to receptors such as outside air louvers or operable windows
- Within a broader context, more energy efficient buildings result in less air and water pollution generation at the power generator

Solid and Liquid Waste Disposal

- Selection of disposable air filters to optimize service life between change outs
- Liquid discharge from building systems can be reduced using lower-impact chemical or nonchemical water treatment for cooling towers and steam boilers

Indoor Environmental Quality

- Means to validate ventilation air supplied in proper quantity and notification when a fault condition exists
- Operator training on maintaining systems to prolong benefits of sustainable design

Digitalization

- Measure and track sustainability progress across a portfolio of buildings[1]
- Optimize performance of building systems to minimize resource waste

Resiliency

- Maintaining energy availability during increasingly frequent emergencies in part due to climate change
- More tenable year round environments in urban areas subject to rolling power outages or fuel supply interruptions

Achieving a degree of sustainability plays a role in climate change mitigation through reduction of greenhouse gas (GHG) emissions. The accounting for GHG emissions reduction is organized around the concept of scope level emissions, first introduced with the 2001 Greenhouse Gas Protocol, but not until signing of the 2015 Paris Climate Agreement did this metric garner momentum due to the drive for a low-carbon world. Scope level emissions are divided into three categories; aptly named Scope 1, Scope 2, and Scope 3 emissions. When thinking about the differences between the three scope levels, remember the acronym "burn, buy, and beyond"[2].

Scope 1 emissions are GHG emissions caused by an entity and its operations, released directly from controlled assets. To remember scope 1 emissions, recall the term "burn". Scope 1 emissions result from direct burning of fossil fuels for space heating or industrial processes. Additionally, scope 1 emissions occur when certain refrigerants are leaked from air conditioning equipment.

Scope 2 emissions are GHG emissions released from a utility provider during the energy generation process. From the perspective of an entity, scope 2 emissions are indirect resulting from purchased energy, the majority being electricity. To remember scope 2 emissions, recall the term "buy".

Scope 3 emissions are GHG emissions covering all other indirect emissions associated with an entity. These emissions occur within the entity's value chain, both upstream and downstream. Scope 3 emissions often account for more than 70% of the entity's carbon footprint, yet the majority are beyond the entity's control. To remember scope 3 emissions, recall the term "beyond".

So how can ASHRAE members interested in sustainability work with clients to better understand, and ultimately reduce their scope level emissions? Here is a matrix relating ASHRAE's sustainability influence to the three levels of scope emissions. Today, we can advise clients on ways to reduce Scope 1 and Scope 2 emissions, but unfortunately have little influence over the broader Scope 3 emissions.

	Emissions[1]		
	Scope 1 Onsite Sources -combustion -refrigerant discharge	**Scope 2** Purchased Fuels -electricity -natural gas, other fuels[2, 3]	**Scope 3[4]** Corporate Value Chain -upstream -downstream
ASHRAE Sustainability Influence			
Energy & Water Use			
-energy resource availability		X	
-fresh water supply			
-efficient resource use	X	X	
Material Resources			
-embodied energy			
-embodied carbon			
-local/regional materials			
Air & Water Pollution			
-noise			
-site / source related	X	X	
Waste			
-longer lived equipment			
-reduce, reuse, recycle			
-liquid waste			

Notes

1. Largest source of GHG emissions is fossil fuels from electricity generation, thermal energy, transportation.
   EPA 2020 Emissions Breakdown: Transportation-29%, Electricity Production-25%, Industry-23%,
   Commercial & Residential-13%, and Agricultural-10%.
2. Emissions for natural gas are considered as anciliary incluiding exploration, drilling and production.
3. Water production generates minor emissions.
4. Up to 70% of emissions can be categorized as Scope 3 and influenced by suppliers and consumers. At present ASHRAE has limited influence over these emission sources.

Let's look at a few examples.

Energy & Water Use – Energy Resource Availability

Electrification is the new "buzzword" towards building decarbonization. However, in areas with "dirty" power is decarbonization through electrification a win-win for the client and greater good of the community? ASHRAE members would be wise to understand the available options from the electric utility for clean power when recommending an electrification solution. Many power generators are already

reallocating their generation mix towards cleaner sources, others are planning to follow suit over the next couple decades. Or is onsite power generation an option. Electrification could be an example of Scope 1 emissions reduction when considered in the context of reducing combustion related emissions and site air pollution. Reducing a client's dependence on purchased electricity through onsite generation is an example of Scope 2 emissions reduction including source air pollution.

Energy & Water Use – Efficient Resource Use

Industrial processes generate vast amounts of waste heat, which is available for other processes, but too often vented to atmosphere instead. Examples include small condensing boilers that recover waste heat from the boiler's flue gas to increase the overall thermal efficiency, or large boilers utilizing stack economizers that transfer thermal energy from the flue gas to process hot water. Useful thermal energy obtained from large oven stacks can be transferred through air to air heat exchangers to preheat combustion air. All these processes contribute to Scopes 1 and 2 emissions reduction through reduced purchase and consumption of fuel energy.

Material Resources – Embodied Carbon

In 2019, the global GHG emissions from the building sector was nearly 14 gigatons of carbon dioxide ($GtCO_2$)[3], or 38% of the total energy related GHG emissions from buildings, including 28% from building operation and 10% from building construction. ASHRAE members can routinely advise clients on ways to reduce carbon through more efficient building operations (Scopes 1 and 2 emissions reduction). Members should keep abreast of "Buy Clean" policy developments in the United States. The consumer preference for lower carbon products, driven by awareness, policies, or incentives, is expected to grow rapidly creating market demand[4]. In fact, last fall the Federal Government announced new Buy Clean initiatives. An example of this could be the proposed replacement of the curtainwall at the Federal Courthouse in downtown Kansas City with an alternate building system with lower embodied carbon. At this time Buy Clean policies are geared towards reducing embodied carbon in major building materials like concrete, steel, and flat glass. In time other building systems and their manufacturers may adopt this initiative. While embodied carbon does not fit within the current scopes 1-3 emissions definitions, it does enter the conversation when conducting a whole building life-cycle carbon assessment.

The Sustainability Committee has been part of the Kansas City ASHRAE community for over a year. In our monthly contribution to the Breeze, we strive to provide content that we hope the majority of members find useful. In this regard we are requesting input from membership, whether your role is that of a design engineer, manufacturer's representative, or construction or service contractor. We all have something of value to contribute, or a lesson learned, around design concepts, systems applications, and construction and operations practices that promote sustainability. As we look towards the next Chapter year one of our goals is creating a shareable database related to sustainability. Membership input in creating this database would enhance its value to the Chapter. Be on the lookout for a future survey request seeking your input.

Thanks,

Sustainability Committee
Larry Navran, larry.navran@se.com
Rob Lippold, rlippold@aeskc.com
Ruben Salinas, ruben.salinas@spur-design.com

References:

1. World Economic Forum, Davos Agenda 2022.
2. As defined on the Green Business Bureau website.
3. UN Environment Programme, 2020.
4. *Knowledge Infrastructure*: The Critical Path to Advance Embodied Carbon Building Codes, 2021, ACEEE

KC ASHRAE - 2022/2023 Board of Governors

Position	Name	E-Mail Address
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BOG At-Large	Meagan Gibbs	meagan.gibbs@hendersonengineers.com
Past President	Ann Peratt	ann.peratt@pkmreng.com

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DiA/Diversity in ASHRAE	Kristin Phelps	kphelps@DLRGROUP.com
DiA Co-Chair	**OPEN**	
Golf	Joe Maness	joe.maness@hoeferwelker.com
Golf	Joe Reed	jreed@mcqueenygroup.com
Govt. Grassroots	Ian Kobler	ian.kobler@crbgroup.com
Govt. Grassroots - Incoming	**OPEN**	
Govt. Grassroots	Greg Paulsen	gpaulsen@trianglesales.com
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Historian - Incoming	**OPEN**	
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Research Promotion Event	Bailey White	Bailey@lankfordfendler.com
Social Media	Ruben Salinas	ruben.salinas@spur-design.com
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If you are interested, please reach out to Rob Jordan, Mechanical Department Manager for Aviation and Federal — rjordan@burnsmcd.com or (816) 830-6190. Or visit burnsmcd.com/careers.

ASHRAE Kansas City Chapter

Are you looking for quality Engineers, Contractors, or Sales Representatives involved in the ASHRAE community, but don't know where to advertise your job posting?

KC ASHRAE has a solution for you! **A half page job posting** can be advertised in the Breeze and on the website for a **$100 RP** donation (per posting, per month).

Please contact Alan Sparling at asparling@p1-service.com if you are interested in advertising in the Breeze and online. No charge for Universities in the chapter.