



## March Newsletter Our 100<sup>th</sup> Year!

27 March 2022- Vol 69, Issue 6



ASHRAE Toronto Chapter cordially invites you to the 100th year anniversary celebration!

24 June 2022  
6 - 11 PM  
7 Hart House  
Circ, Toronto,  
ON  
M5S 3H3

The celebration will take place at Hart House, a beloved historic structure in downtown Toronto. This expansive outdoor and indoor space combination has a spectacular castle-like feel and views of original stonework and leaded glass windows. For more information and to register click [HERE](#).



### The Decade of The Great Decarbonization [\[i\]](#)

By Shahid Naeem, P.Eng. PMP, Manager, Energy and Sustainability, Peel District School Board, ASHRAE Member

Climate concerns are regularly in news headlines. A United Nations-led effort for limiting global warming to 1.5 degrees C, by the end of the century, has seen 110

countries and one-quarter of Fortune Global 500 companies committing to achieving carbon neutrality by 2050 (or earlier). Forty percent [\[ii\]](#) of global carbon emissions are associated with buildings. ASHRAE has formed a Taskforce for Building Decarbonization (TFBD) headed by former ASHRAE Presidents, Thomas H. Pheonix and Donald Colliver. The details on ASHRAE's decarbonization-related policies briefs and standards are available at <https://www.ashrae.org/about/ashrae-task-force-for-building-decarbonization>. HVAC&R systems contribute to global warming emissions through operational and embodied carbon. Operational carbon includes the direct emissions from on-site energy consumption and refrigerant leakage, as well as the indirect emissions of grid-sourced electricity and water. Embodied carbon emissions occur from raw material extraction,

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manufacturing, transportation, and installation, along with HVAC&R equipment removal and disposal at end of life[[iii](#)]. To provide a sense of the magnitude of carbon emissions, a study[[iv](#)] estimated HVAC equipment to have embodied carbon of 0.6 to 1.1 kg CO<sub>2</sub>e /ft<sup>2</sup>, not including the refrigerant. The operational carbon was 0.7 kg CO<sub>2</sub>e/ft<sup>2</sup> yr.

Decarbonization does not mean zero carbon. Decarbonization means lowering carbon emissions to the minimum possible levels with available technologies and tools. The residual carbon emissions are to be offset via nature-based or technology-based negative carbon projects. Carbon is a design problem to be solved to eliminate harmful carbon emissions while protecting carbon in the natural environment for food, farming, and everyday materials.

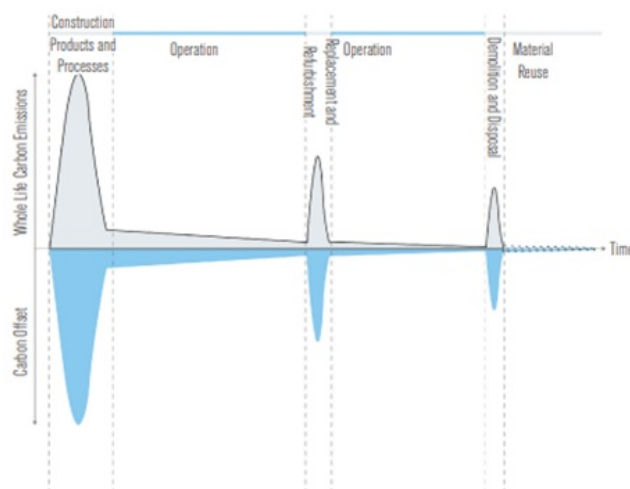


Figure 1: Emissions, and offsets required for a Net Zero Carbon building, over its life [[iv](#)].

The TFBF has formed nine sub-committees for examining the range of decarbonization topics; such as embodied carbon reporting standards for HVAC&R equipment, and collaboration with other professional associations and regulatory authorities. ASHRAE continues its focus on energy efficiency. High global warming potential (GWP) of refrigerants, such as 410 A (2,000+ times GWP of CO<sub>2</sub>e), is to be examined holistically for ozone depletion potential (ODP), energy efficiency, lifecycle carbon, and flammability, as well as safety of lower GWP refrigerants. ASHRAE believes its decarbonization work complements building resilience efforts. A low-carbon building is a more resilient building. Climate Change efforts are going to have a significant impact on the HVAC&R industry; from new as-a-service type business models for aligning split tenant-owner incentives[[v](#)], to equipment vendors bearing the responsibility for collection and disposal of end-of-life equipment. With the UN's 2030 targets close, this would be the Decade of the Great decarbonization[[vi](#)]. You can reach out (perhaps, get

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involved) to TFBFD at [decarb@ashrae.org](mailto:decarb@ashrae.org).

[i] Erin McConahey is the original author of this slogan, The Carbon Context, ASHRAE Journal, September 2021

[iii] ASHRAE Journal Podcast: Demystifying Decarbonization, Oct 25, 2021

[iii] Erin McConahey, Counting Carbons and Circular Diets, ASHRAE Journal, May 2020

[iv] Erin McConahey, Counting Carbons and Circular Diets, ASHRAE Journal, May 2020

[v] [https://www.rff.org/publications/issue-briefs/energy-service-business-model-expanding-deployment-low-carbontechnologies/#:~:text=Energy%2Das%2Da%2Dservice%20\(EaaS\)%20is%20a,deliver%20the%20desired%20energy%20service](https://www.rff.org/publications/issue-briefs/energy-service-business-model-expanding-deployment-low-carbontechnologies/#:~:text=Energy%2Das%2Da%2Dservice%20(EaaS)%20is%20a,deliver%20the%20desired%20energy%20service).

[vi] Erin McConahey is the original author of this slogan, The Carbon Context, ASHRAE Journal, September 2021

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## New Board of Governors 2022 - 2023

ASHRAE Toronto Chapter Nominating Committee is pleased to announce next year's Board of Governors members (2022-2023). They will be inaugurated in May in a special ceremony. All Society and Chapter members in good standing are welcome to nominate themselves or another member as a candidate to the board. It's a rewarding experience both personally and professionally.

Sincerely,

Glenn Kilmer

ASHRAE Toronto Chapter Nominating Chair

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Contact [David Sinclair](#) to post your business card here!

**Save the Date!**

**ASHRAE Toronto Chapter Golf and**



Cycling day is Monday, June 13<sup>th</sup>.

Registration for participants and  
sponsors will open shortly.

## Toronto Green Standard: Net Zero by 2028

**Monday, April 4, 2022**

**5:30 PM to 6:30 PM - Networking - 6:30 PM to 8:30 PM - Dinner and Presentation**

**Burlington Convention Centre - 1120, Burloak Dr, Burlington L7L 6P8**

The Toronto Green Standard is Toronto's sustainable design requirements for new private and City-owned developments since 2021. In Dec 2021 City Council adopted the Net Zero by 2040 Climate Strategy and accelerated the Toronto Green Standard (TGS) implementation dates for the Greenhouse Gas (GHG) Emission limits to 2025 and 2028 so that buildings constructed on or after 2030 are near-zero-emissions. Speakers will provide a clear understanding of the City's climate change objectives and expectation for future updates, including implementation of Toronto Green Standard from Energy Efficiency and GHG Emissions perspective.

For more information and to register click [HERE](#)



**David Hall, P.Eng., MBA, LEED  
Green Associate**

Project Manager, City of Toronto



**David MacMillan**  
Program Manager, City of Toronto

## Fundamentals and Application of Standard 55

**Thursday, April 20, 2022, 2-5 PM**

**Online ASHRAE Instructors-led Course**

Based on ANSI/ASHRAE Standard 55, *Thermal Environmental Conditions for Human Occupancy*, this course covers the theory and principles of the standard. It is intended to bridge the gap between the design practitioner's knowledge of the built environment and its thermal relationship to the occupant's physiology and psychology. Using examples, the course illustrates how to achieve compliance with the standard for the purposes of satisfying the requirements of various building performance programs such as LEED.

For more information and to register click [HERE](#)



**Robert Bean, R.E.T., P.L.(Eng.)**  
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**Peter Alspach, P.E., Member,**  
**LEED AP**

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We want to hear from all members of the industry and are excited to share HVAC/building system news and current chapter events.

Have some thoughts on social media content? Email: [Eshan Patil](#)

## ASHRAE Toronto Chapter

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