



Task Force for Building Decarbonization Board Update

2/5/2023



ASHRAE's position...

*Eliminating GHG emissions from
the built environment is essential
to address climate change*



ASHRAE's goals...

2030

the global built environment must halve its 2015 GHG emissions

- All new buildings must be NZE
- Widespread EE retrofits of existing assets
- New construction embodied carbon must be reduced by at least 40%

2050

all new and existing assets must be net zero GHG emissions across the whole life cycle



Task Force Key Objectives

- ✓ **Expedite** the delivery of technical resources that help design engineers deliver and operate low-carbon buildings
- ✓ **Ensure** goals are accomplished within the established timeframes
- ✓ **Collaborate** joint building decarbonization initiatives with other organizations
- ✓ **Coordinate** work with other ASHRAE committees to align goals and eliminate bottlenecks
- ✓ ASHRAE as a **global leader**

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**TFBD
Executive Committee**

Kent Peterson, Chair
Don Colliver, Vice Chair
Blake Ellis
Luke Leung
Bing Liu
Clay Nesler
Stet Sanborn
Ginger Scoggins



**TASK FORCE FOR
BUILDING
DECARBONIZATION
2022-23**

**Operational
Subcommittee**

Blake Ellis, Chair

**Building Decarbonization Retrofit
Guide WG**

David Heinzerling, Chair

**Heat Pump Application &
Operation Guide WG**

Mark Frankel, Chair

**Healthcare Decarbonization
Guide WG**

Tim Peglow, Chair

**Building Performance Standard
Technical Guide WG**

Adam Hinge, Chair

**Grid-interactive Buildings for
Decarbonization Guide WG**

Katherine Hammack, Chair

**Building Decarbonization Whole
Life Design Guide WG**

Michael Deru, Chair

**Products & Services
Subcommittee**

Stet Sanborn, Chair
Costas Balaras, Vice Chair
Dru Crawley
Kayleigh Houde
Laurie Kerr
Nanette Lockwood
Paul Torcellini

Web Site & Knowledge Hub WG

Carrie Brown, Chair

Training & Education WG

Tom Lawrence, Chair

STANDARDS

EDUCATION

**KNOWLEDGE
RESOURCE
HUB**



**TECHNICAL
TOOLS**

**POSITION
DOCUMENT**

**Four
Key
Focus
Areas**

Standards to Address the Decarbonization Needs

Standard 90.1

- Developing a jurisdictional option for net zero energy code adoption
- Setting the direction for 90.1 to target net zero energy by 2031
- Allowing carbon as a metric (Appendix I in 90.1-2022 edition)

Standard 90.2

- Moving at least halfway toward net zero energy by 2023
- Creating an informative appendix for net zero energy/carbon by 2023
- Developing a fully net zero energy and carbon standard by 2025

Standard 100

- Becoming a Building Performance Standards
- Addressing both energy and carbon reductions in existing buildings

Standards to Address the Decarbonization Needs

Standard 211

- Commercial building energy audit standard
- Developing an informative annex to add carbon audit
- Planning to reconvene Standard 211 to incorporate both energy and GHG reduction audit

Standard 240P

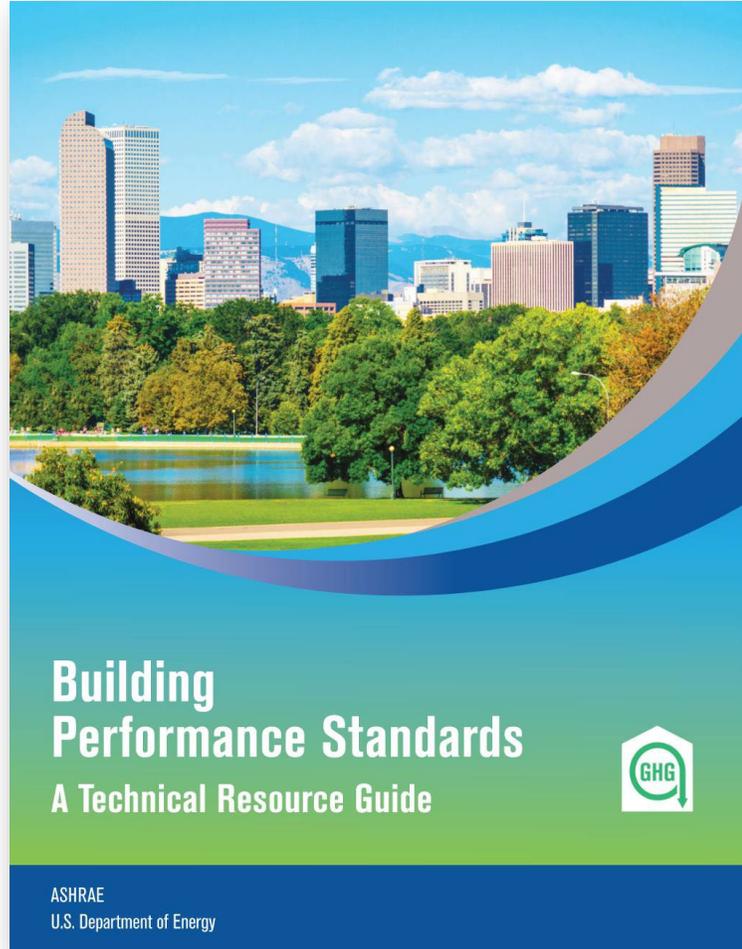
- New ASHRAE/ICC Standard
- Evaluating GHG emissions in building design, construction and operation
- Reviewed and edited the seed document to expedite the standard development



Technical Tools Update

- *One new technical resource guide published*
- Six more guides under development
- More tools are coming...

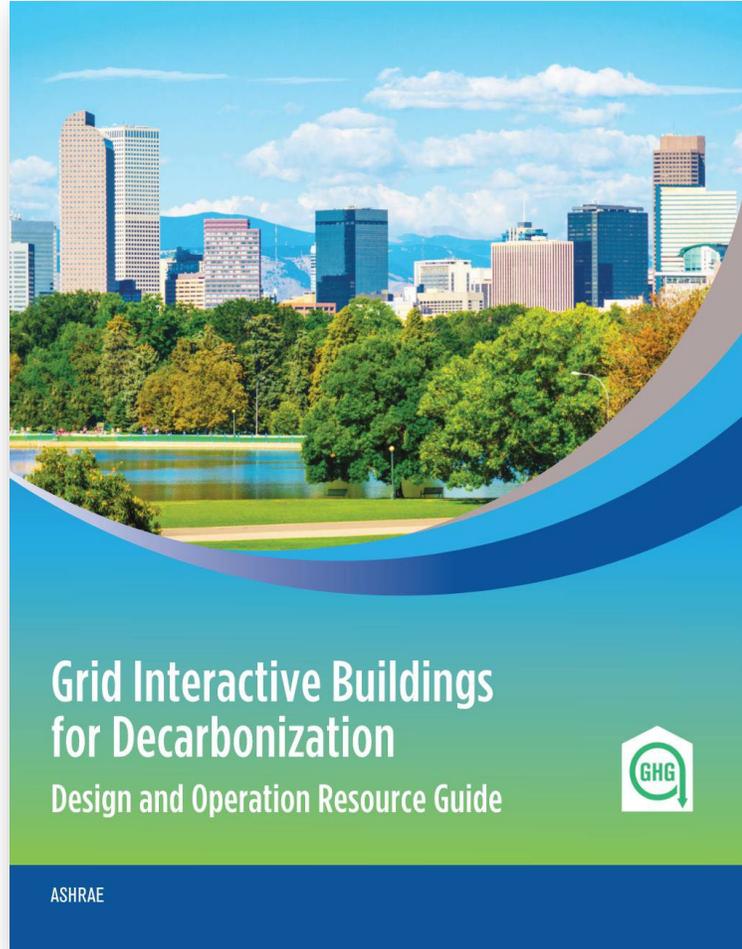
Technical Guides Update



- **Guide:** *Building Performance Standards: A Technical Resource Guide*
- **Leads:** Adam Hinge, Andrea Mengual, Bing Liu
- **Working Group:** Building Performance Standards WG
 - Developed in collaboration with the US Department of Energy (DOE)

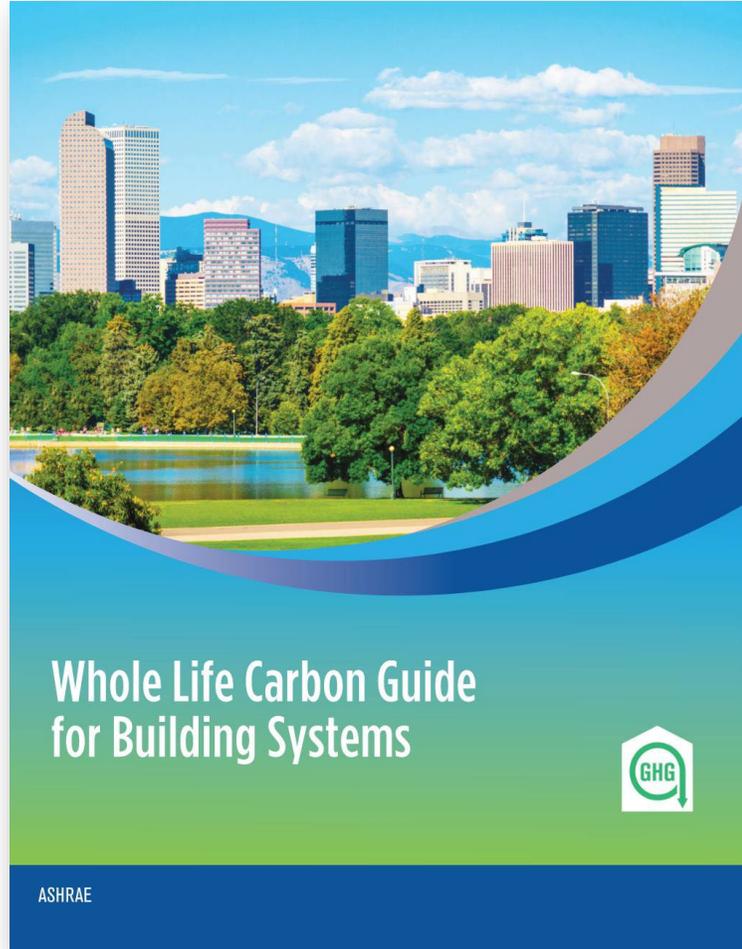
NOW available for
FREE download

Technical Guides Update



- **Guide:** *Grid Interactive Buildings for Decarbonization: Design and Operation Resource Guide*
- **Lead:** Katherine Hammack
- **Working Group:** Grid Interactive Buildings WG
 - Work Statement is Approved
 - Bidding & Contract Award is complete
 - Contractor is New Building Institute
 - ***60% DRAFT due February 3, 2023***
 - Next step is review of the 60% DRAFT by the WG
 - Planned completion: September 2023

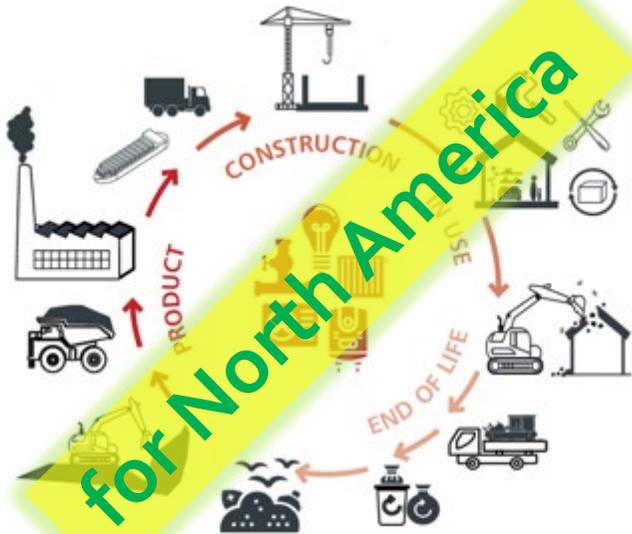
Technical Guides Update



- **Guide:** *Whole Life Carbon Guide for Building Systems*
- **Lead:** Michael Deru
- **Working Group:** Whole Life Carbon WG
 - WG is meets bi-weekly
 - Guide is being written by the WG
 - Work Statement Approved
 - **60% Complete March 2023**
 - 90% Complete May 2023

Technical Guides Update

Embodied carbon in building services:
a calculation methodology



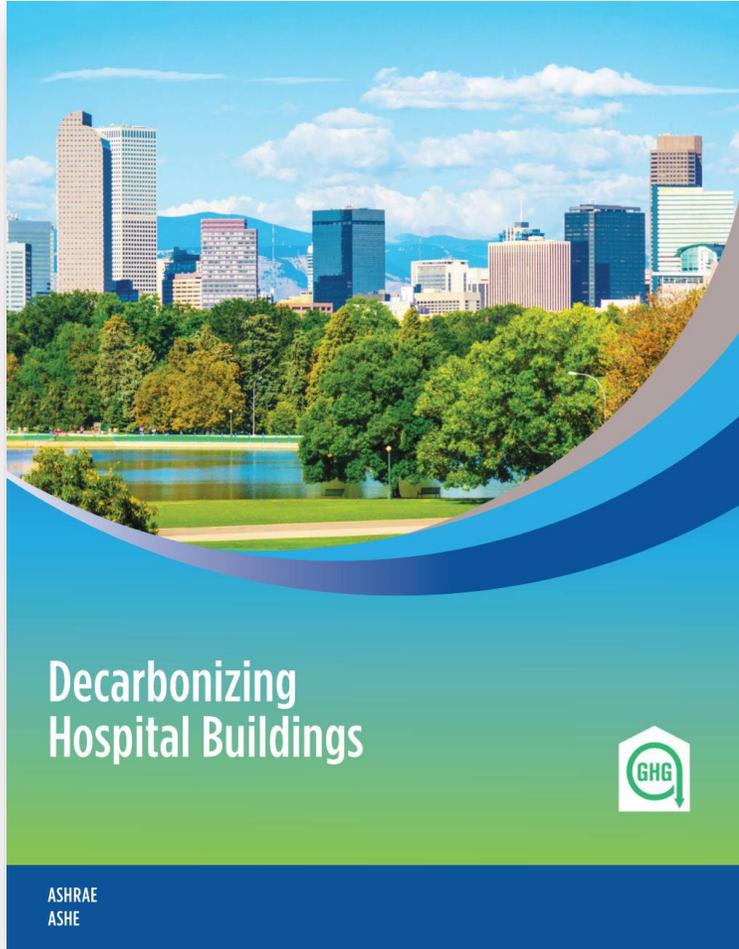
TM65: 2021



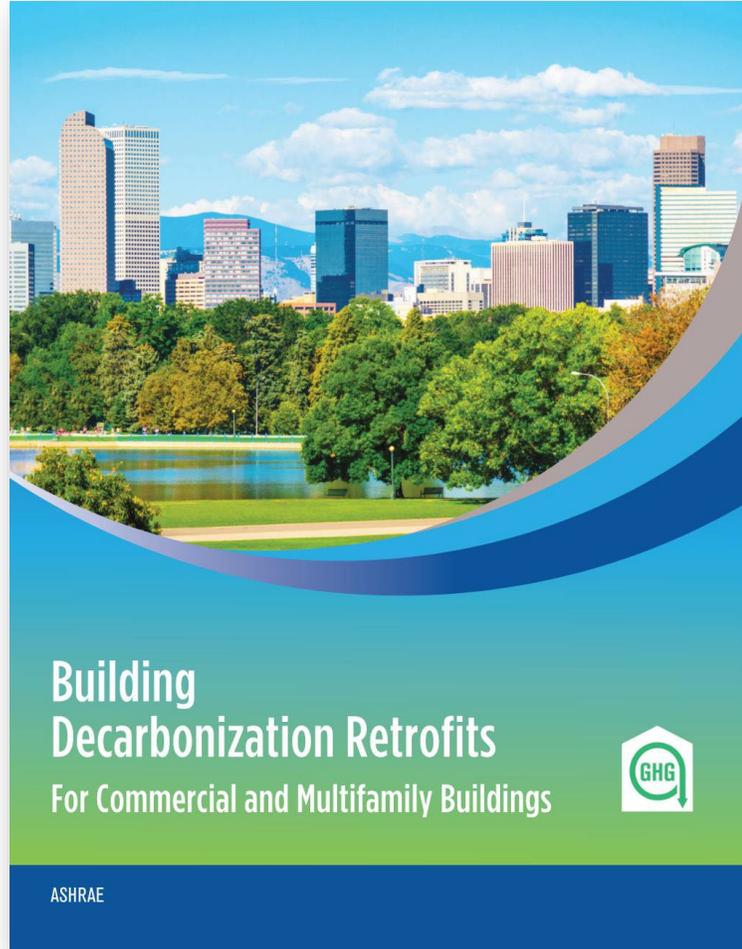
- **Guide:** *TM65 for North America*
- **Lead:** Michael Deru
- **Working Group:** Whole Life Carbon WG
 - WG meets bi-weekly
 - Guide is being written by the WG
 - Work is under an ASHRAE-CIBSE Agreement
 - CIBSE local amendment guidelines
 - Local Working Group has representatives from Canada, Mexico and United States
 - CIBSE Review Group
 - Publication is by CIBSE

Technical Guides Update

- **Guide:** *Decarbonizing Hospital Buildings*
- **Lead:** Tim Peglow
- **Working Group:** Hospital WG
 - Work Statement is Approved
 - *Currently Bidding*
 - Bids Due: February 20, 2023
 - If interested in the RFP, contact: Stephanie Reiniche at ASHRA



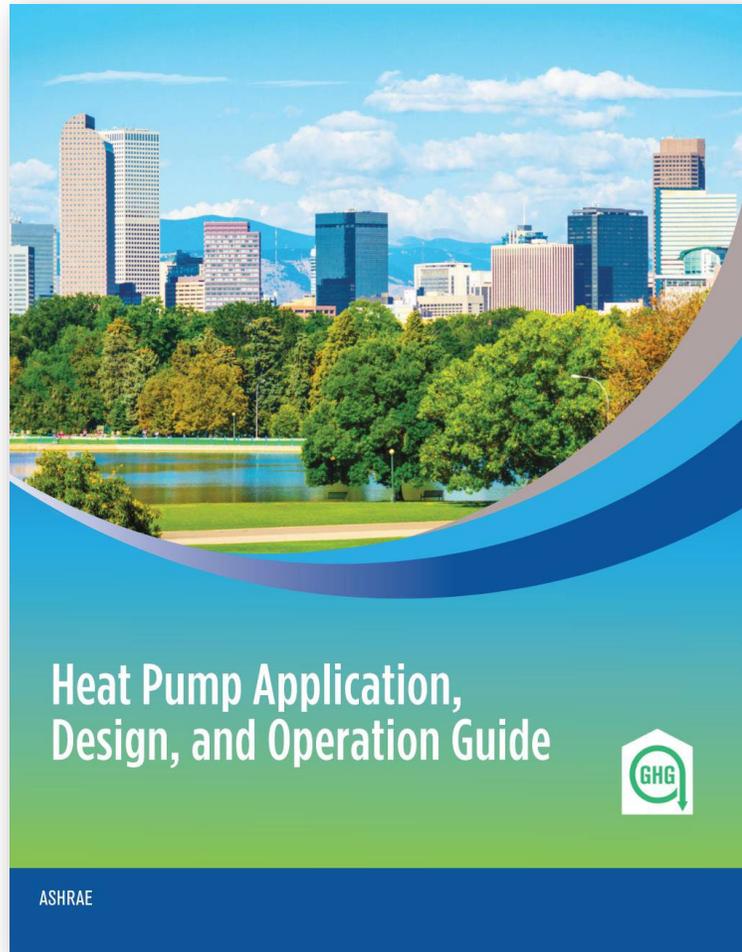
Technical Guides Update



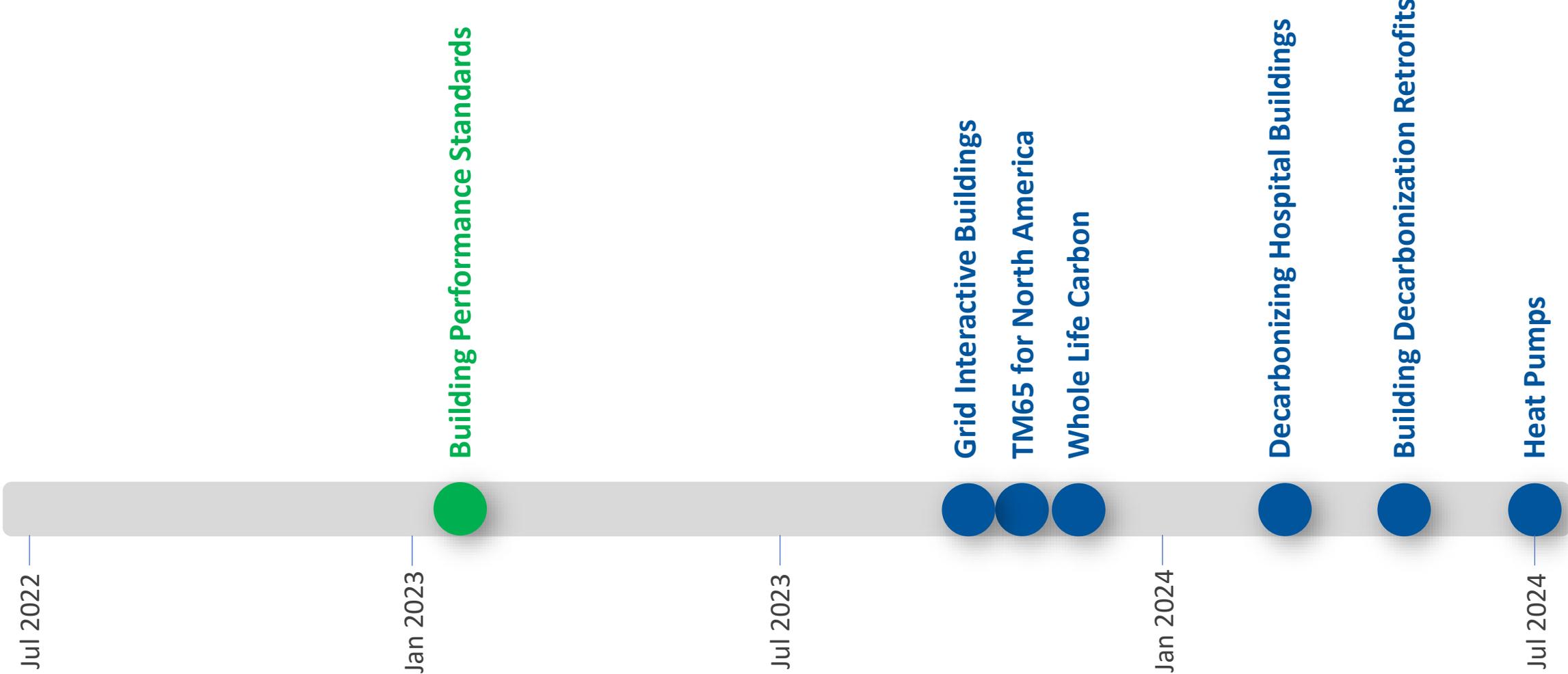
- **Guide:** *Building Decarbonization Retrofits For Commercial and Multifamily Buildings*
- **Lead:** David Heinzerling
- **Working Group:** Retrofit WG
 - Work Statement is Approved
 - Bidding is Complete
 - *Currently Evaluating Bids*
 - Next step is an award and a kick-off meeting with the selected bidder

Technical Guides Update

- **Guide:** *Heat Pump Application, Design, and Operation Guide*
- **Lead:** Mark Frankel
- **Working Group:** Heat Pump WG
 - Work Statement is Approved
 - *Currently Bidding*
 - Bids Due: February 13, 2023



Technical Guide Series Schedule





Education

- Building Decarbonization 101 (1 hour)
- Additional 1-hour seminars coming this spring
- Multiple ALI decarbonization courses (3 hours)
- Heat Pump Application and Operations (full-day)
- Building Decarbonization Retrofits (full-day)
- Building Decarbonization Audit (full-day)



Knowledge Resource Hub

- The new [TFBD website](#) is LIVE
 - ASHRAE goals and commitments
 - Technical guide updates
 - Technical resources
 - Decarbonization primer
 - Terminology
 - Educational videos
- Website will be continually updated with new information

Internal Collaboration

- 44 Technical Committee liaisons to TFBD working groups
- Planning Committee on new Building Decarbonization goal for the existing Strategic Plan
- TC 1.6 on decarbonization definitions into ASHRAE Terminology database
- GAC on building electrification PPIB
- *Kudos to ASHRAE staff!*



External Collaboration

- *TExCom will guide outreach to other organizations to leverage ASHRAE's work*
- *Combining building decarbonization resources and aligning initiatives with other like-minded organizations should serve as a building **decarbonization force multiplier** while concurrently raising ASHRAE's profile*
 - DOE/LBNL on their development of a GHG Emissions Reduction Audit Checklist for Owners
 - TFBD Global Advisory Panels





Building Industry Collaboration

Building Industry Decarbonization Collaborative

- AIA, ASHRAE, BOMA, IFMA, ULI, USGBC
- Interest from DOE and EPA
- Organizations span the building value chain
- Local chapters in major cities nationally/globally
- Potential areas of focus:
 - Workforce education and training
 - Next generation workforce recruiting
 - Support for local government programs



2023 ASHRAE WINTER CONFERENCE

ATLANTA, Feb 4-8 | AHR Expo, Feb 6-8

Questions?

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