

# 2018-4-11\_Wed Dinner Mtg - Climate Change

## PRESENTATION:

### Impacts of Climate Change and Urbanization on Future Building Performance

With the increasing interest in climate change driven by human activity, recent research has focused on the impact of climate change or urban heat island on building operation and performance across the world. But this work usually aggregates the energy and peak demand impacts across a broad sector. In a recent study, impacts on the operating performance of an office building were estimated based on climate change and heat island scenarios in 25 locations (20 climate regions). This presentation presents the variation and differences among the 20 regions when climate change is introduced. The focus is on changes in comfort conditions, building equipment operation as well as daily patterns of energy performance using prototypical buildings that represent typical, good, and low-energy practices around the world. Other issues such as fuel swapping as heating and cooling ratios change, impacts on environmental emissions, and how low-energy building design incorporating renewables can significantly mitigate any potential climate variation are also presented.

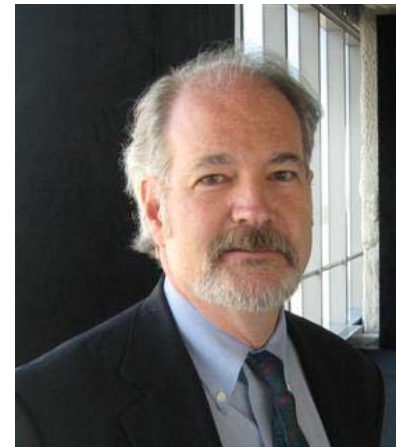
GBCI Approved | 2 CE Hour | 0920010369  
AIA Approved | 2 LU/HSW | CRAWLEY05

## SPEAKERS BIO:

Drury B. Crawley, Ph.D.  
Director, Building Performance, Bentley Systems

Dru Crawley is Bentley Fellow and Director, Building Performance focusing on building performance, BIM, net-zero-energy buildings, and sustainability. Before being elevated to Bentley Fellow in 2014, he led development of Bentley's suite of building performance software for four years. Prior to joining Bentley in 2010, Dr. Crawley developed and managed EnergyPlus and the USDOE's Commercial Buildings Initiative (now Better Buildings Initiative and Alliances) promoting creation of net-zero-energy buildings.

With more than 35 years of experience in buildings energy efficiency, renewable energy, and sustainability, he has worked in engineering software development, government research and standards development organizations, as well as building design and consulting companies. He received his PhD in Mechanical Engineering from University of Strathclyde in Glasgow, Scotland on the topic of building simulation as a policy tool, a Bachelor of Architecture from University of Tennessee and is a registered architect.



Dr. Crawley is active in ASHRAE (Chair of Standard 169 Climatic Data for Building Design Standards, member of Standards Committee, member of SSPC 189.1 (Standard for the Design of High-Performance, Green Buildings Except Low-Rise Residential Buildings), member of SSPC 140 (Standard Method of Test for the Evaluation of Building Energy Analysis Computer Programs), former member of the Technical Activities, Research Administration, Advocacy, and Grassroots Government Activities Committees, and past chair of Technical Committees 2.8, 4.2, 4.7, and 7.1). He was made an ASHRAE Fellow in 2009 and achieved ASHRAE BEMP (Building Energy Modeling Professional) certification in October 2012. He has received several ASHRAE awards: Exceptional Service Award (2013), Service to ASHRAE Research Award (2012), Distinguished Service Award (2003), and Symposium Best Paper Award (1999) for "Which Weather Data Should You Use for Energy Simulations of Commercial Buildings?"

He is also active in the International Building Performance Simulation Association (IBPSA at-large board member since 1998, Fellow in 2012, Regional Affiliate Liaison since 2006), IBPSA-USA (board member since 2013, vice president since 2017, treasurer 2013-2017), U. S. Green Building Council (USGBC, vice chair of the Energy & Atmosphere Technical Advisory Group, past member, Research Committee, past research Liaison), the American Institute of Architects (AIA), an Affiliate member of CIBSE, and serves on the editorial boards of three international Journals. He has written more than 125 papers and articles, testified before the U.S. Congress, lectured at more than 25 universities, and made more than 400 presentations on building energy efficiency, sustainability, and renewable energy throughout the world. As an ASHRAE Distinguished Lecturer, he has given more than 100 presentations and workshops to more than 60 ASHRAE chapters throughout the world.

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## SCHEDULE:

4:00 pm: . . . . . Board of Governors meeting (open to all members)

5:30 pm: . . . . . Sign-in & Socialize

6 - 8 PM: . . . . . Meeting, Meal & Presentation

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## REGISTRATION:

*Please RSVP / Pre-Register* so we can get a good head-count for the drink and meal quantities. **Save \$10** if registered **before the Early Bird** cutoff date/time of 2 PM on Monday before the meeting.

*Pre-pay On-Line:* Cut down your wait at the Welcome Table! (PayPal & CCs)

Note: On-Line registration and pre-payment closes the midnight before the event

*Welcome Table:* accepts Personal Checks and CCs.

*Student Members* are welcome at **no cost**, (and non-member students who are their guests), **if they pre-register** before the Early Bird cutoff.

OTHERWISE, you'll have to pay a walk-in fee of \$10.

*Not a member of Triangle ASHRAE?* You are still welcome to register On-Line. (Use Non-Member ticket). Get the \$10 discount if before the EB cutoff!

Registration Fee includes drinks and the meal

**Meeting Focus: MEMBERSHIP PROMOTION**  
**Chapter Members may bring a Guest at no additional charge**  
(if both registered before the EB cutoff)

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## PDH (Professional Development Hour) CREDIT:

This presentation should meet the NC PE criteria for 1 hour of PDH credit (unless noted on the sign-in sheet).

Please Pre-Register with your PE number, and sign the Attendance Verification sheet.

Should the state ever require Proof of Attendance, simply forward their request to [President@TriangleASHRAE.com](mailto:President@TriangleASHRAE.com) and a copy of the Attendance Sheet will be provided to them. Note: their rules require you to keep additional records. See the NC PE Board for details.