

ENERGY CODES | 2018

JULY 15-17 | Austin, TX

2018 NATIONAL ENERGY CODES CONFERENCE

Hosted by
U.S. DEPARTMENT
OF ENERGY

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ENERGY

Office of ENERGY EFFICIENCY
& RENEWABLE ENERGY



Building Energy Codes

Continuing Education: Continuing education options are provided for members of the American Institute of Architects (AIA) and International Code Council (ICC). The DOE Building Energy Codes Program is an AIA and ICC Continuing Education provider, with credits available for most conference sessions. RESNET CEUs will be offered also. Pick up forms at the conference Registration desk.

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Highlights

THANK YOU FOR ATTENDING

the 2018 National Energy Codes Conference. We're glad you could join us for this exclusive opportunity to participate in a lively, solution-focused forum for all topics related to building energy codes, with a special focus on compliance.

The 2018 National Energy Codes Conference

EXTENDS THE DEEPEST THANKS TO OUR ORGANIZERS, SPEAKERS AND ATTENDEES

for making this event possible.

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Building Energy Codes

A Less-Paper Event

In our efforts to conserve resources, we will not provide handouts of individual sessions. All presentations will be available at www.energycodes.gov after the event.

This program is made out of recycled materials.



welcome



REGISTRATION OPENS

7:30 am Monday, July 16

8:00 am Tuesday, July 17

Registration desk is located in the Pre-function Ballroom.



BREAKFAST

Please join us for a breakfast every morning throughout the conference in the Pre-function Ballroom.

Monday

7:30am to 8:30am

Tuesday

8:00am to 9:00am



Wi Fi

1. Turn on Wifi on your computer
2. Connect to att wifi SSID
3. Go to a public web page like www.google.com to get the AT&T splash page
4. Agree to terms of service
5. The connection is valid for up to 24 hours.



VISITORS GUIDE

Austin visitors information will be located at the Registration desk.



HOTEL CONTACT

AT&T Hotel and Conference Center
1900 University Ave.
Austin, TX 78705
512.404.3600



KEYNOTE **Speaker**

Stephen Costello | July 16 & 17, 2018

Steve is an engineer with a background in flood control and drainage. His first job in Texas was with the U.S. Army Corps of Engineers in Galveston. He co-founded Costello, Inc. in 1991, a Houston civil engineering and surveying firm named repeatedly as one of the “Best Places to Work” by the Houston Business Journal. He served as president of the local and state chapters of the American Council of Engineering Companies and was named “Engineer of the Year” in 2014 by the Texas Society of Professional Engineers.

Steve served as an at-large member of the Houston City Council for six years from January 2010 to December 2015. In May of 2016, Mayor Turner appointed Mr. Costello as the city’s chief resilience officer. His primary task is to focus on the flooding and drainage issues facing the city, thus his “Flood Czar” label.

Steve is currently an active board member of Family Houston, a 114-year old nonprofit providing case management and counseling services to families in need. He also has served on the boards of the Memorial Park Conservancy, SER Jobs for Progress, and Marathon Kids.

Steve is a longtime runner and triathlete. He and his wife Debbie raised two sons in Houston and are now proud grandparents to three granddaughters.

ENERGY CODES BOOTCAMP

Sunday, July 15

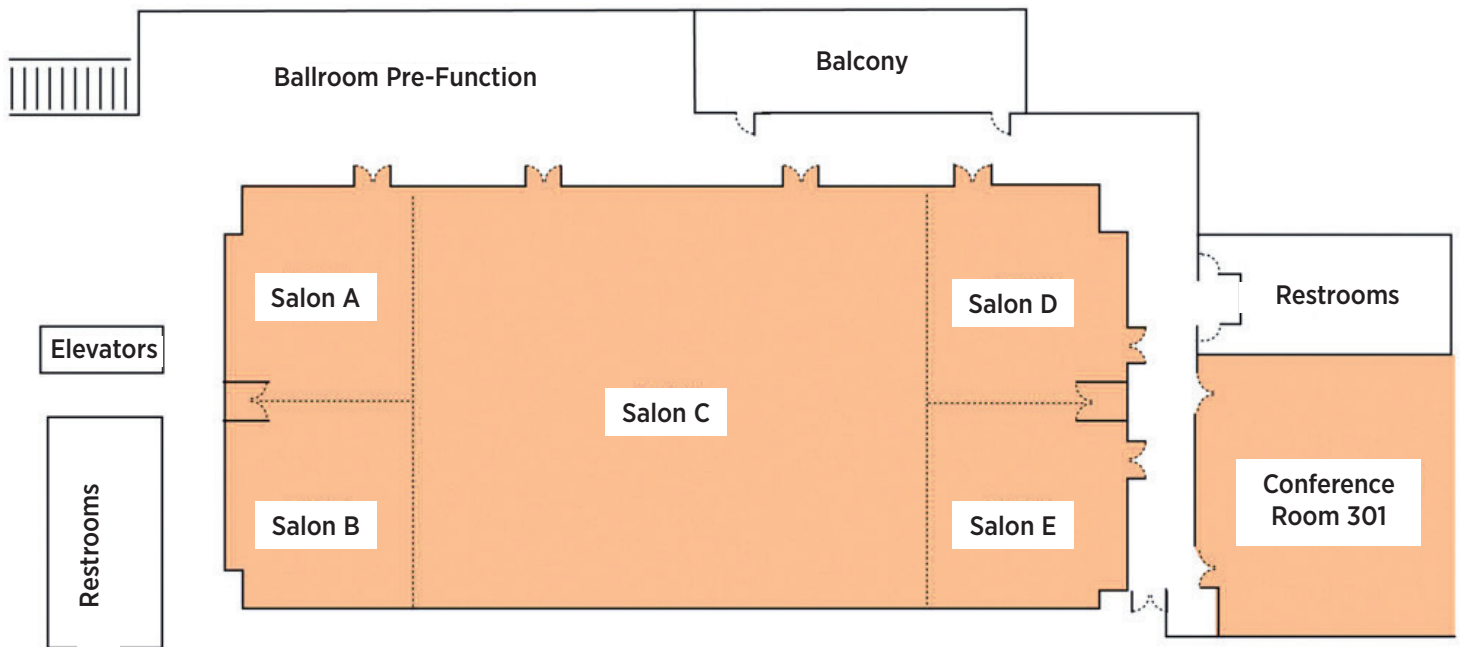
Classroom 203

12:30 PM – 1:00 PM	Registration
1:00 PM – 2:00 PM	Energy Codes 101 / What's New in Codes
2:00 PM – 3:00 PM	REScheck Basics
3:00 PM – 5:00 PM	COMcheck Basics
5:00 PM – 6:00 PM	Welcome Reception & Poster Session

ENERGY CODES BOOTCAMP

A crash course in energy codes! The workshop will provide a sampling of code basics, compliance software training, and what's new in codes.

CONFERENCE Floor Plan



DAY 1 Monday, July 16

7:30 AM – 8:30 AM	Registration and Breakfast (Pre-function Ballroom)	
8:30 AM – 9:00 AM	Welcome and Opening Remarks (Salon C)	
9:00 AM – 10:00 AM	Keynote Speaker - Stephen Costello , City of Houston (Salon C)	
10:00 AM – 10:30 AM	Break	
10:30 AM – 12:00 PM	[D1S1] Building Science: It's Not Just for the Academics (Salon AB)	[D1S2] It Takes a Village! How Policy and Nontraditional Code Stakeholders are Changing the Codes Conversation (Salon DE)
		[D1S3] Discussion: What's Next: EVs, Energy Storage Systems, and Solar. Will These Technologies Play a Larger Part in Forthcoming Building Codes? (Conf. Rm 301)
12:00 PM – 1:00 PM	Networking Lunch (Salon C)	
1:00 PM – 2:00 PM	Jolt Session (Salon C)	
2:00 PM – 3:30 PM	D1S4: Progressively Effective Energy Codes (Salon C)	[D1S5] Discussion: How Home Rule Communities Implement Codes: Challenges, Opportunities and Potential Solutions (Conf. Rm 301)
3:30 PM – 4:00 PM	Break	
4:00 PM – 5:30 PM	[D1S6] Where We are Going with Energy Code Compliance (Salon C)	[D1S7] Discussion: Existing Buildings: Challenges and Opportunities to Improve Energy Performance Through Codes and Related Policies (Conf. Rm 301)
Field Trip: Rowling Hall		

Building Science: It's Not Just for the Academics

Put down your IECC, ASHRAE and EEBA Builder's Guides. We're going to do hands-on translating of building science best practices and code requirements into something we can all actually use. We'll cover the why and the how behind today's codes and the latest energy-efficiency strategies.

It Takes a Village! How Policy and Nontraditional Code Stakeholders are Changing the Codes Conversation

Want to get the codes actually used and enforced? Want to move beyond the base code? We need to engage the whole village. The panelist will discuss their roles and how they are working to transform the codes conversation showing that the energy code isn't just about energy but its relationship to health, safety and resiliency.



DAY 1 Monday, July 16 *(Continued)*

What's Next: EVs, Energy Storage Systems, and Solar. Will These Technologies Play a Larger Part in Forthcoming Building Codes?

The energy code has many technologies and components as part of its foundation. Starting in the 2018 IECC renewable energy is recognized in the ERI path for compliance. Are EVs and battery storage next up and are these technologies most appropriate for the IECC or other I-codes?

With both EV sales accelerating and battery storage system prices decreasing at a faster rate than solar PV and the move of the utility industry to recognize the time value of energy – are these technologies bound for the IECC? Come participate in this lively and educational discussion about these new technologies.

Progressively Effective Energy Codes

Moving into future energy codes we need to think about taking out the language of “more stringent” and look to developing energy codes that appeal to the design, construction, jurisdiction and utility communities. Progressively effective energy codes are built through partnerships with stakeholders and look to market best practices as a guide to change. This session will present some of the new and innovative approaches to energy code evolution.

How Home Rule Communities Implement Codes: Challenges, Opportunities and Potential Solutions

Home rule puts the burden of code adoption on local communities. This session will bring together code officials and advocates to discuss approaches that home rule communities have taken to adopt, implement and enforce energy codes. The session will also examine challenges faced by communities such as conflicting understanding of code applicability to home rule communities.

Where We are Going with Energy Code Compliance

Currently, energy code compliance can follow prescriptive, UA or performance paths to get

to compliance. But what approach is best? What approach are we headed toward when we look at the future of energy code requirements? This session provides an overview of the current compliance approaches and an educated view on where we are headed and how the flow of code information will move to improve compliance in the future.

Existing Buildings: Challenges and Opportunities to Improve Energy Performance Through Codes and Related Policies

This group discussion will start with a quick recap of code-based options for improving the energy performance of existing buildings. We will consider challenges to addressing existing buildings as well as new, innovative approaches to overcome those challenges. The group will wrap up by identifying and examining key cities, policies and programs that are effectively decreasing energy use in our existing building population and can be a model for others going forward.

Field Trip: Rowling Hall

The McCombs School of Business recently celebrated the opening of its new 497,500-square-foot graduate business facility, Robert B. Rowling Hall, at The University of Texas at Austin. Rowling Hall houses the Texas McCombs MBA and M.S. in Technology Commercialization programs. It is also home to the Jon Brumley Texas Venture Labs, the John C. Goff Labs, and the Center for Leadership and Ethics, and it doubles the space available for Texas Executive Education programs. The new facility comprises five stories above grade and six below grade that are designated for parking. It was designed by Jacobs and Ennead Architects. DPR is the construction manager for the project. Construction began in late 2014.

New graduate business building. Interesting layout, progressive food operation, fairly average LEED building.

DAY 2 Tuesday, July 17

8:00 AM – 9:00 AM	Registration and Breakfast (Pre-function Ballroom)		
9:00 AM – 10:00 AM	Whose Job is it Anyways? (Salon C)		
10:00 AM – 10:30 AM	Break		
10:30 AM – 12:00 PM	[D2S1] The Nexus of Building Energy Codes to Water and Air Quality Benefits (Salon AB)	[D2S2] ERI Compliance Path, Opportunities and Challenges (Salon DE)	
12:00 PM – 1:30 PM	Lunch and Jeffrey A Johnson Award		
1:30 PM – 3:00 PM	[D2S3] Multifamily Codes Cram Session (Salon AB)	[D2S4] New Tools to Aid Energy Code Compliance (Salon DE)	[D2S5] Discussion: The Tectonics of Building Energy Code Policy (Conf. Rm 301)
3:00 PM – 3:30 PM	Break		
3:30 PM – 5:00 PM	[D2S6] Residential Energy Code Compliance Toolbox (Salon AB)	[D2S7] Third Party Professionals and Commercial Energy Codes (Salon DE)	[D2S8] Advancing Technology Here Today or Coming Next Year and How Buildings are Part of the Scale (Salon C)

Field Trip: Blanton Museum of Art

Whose Job is it Anyways?

This plenary session will be a frank discussion on the roles and responsibilities of folks in the energy code adoption and compliance processes. We will hear from state, local, utility and private business to identify challenges and solutions to the adoption and compliance with energy code, and how it effects productivity in the building sector.

The Nexus of Building Energy Codes to Water and Air Quality Benefits

Energy and water are profoundly linked. Energy is required to provide and dispose of water used in buildings and water is needed to provide energy. Improving the energy and water performance of buildings also affects the emission of pollutants and their impacts on air quality. This session will explore these connections to better understand how building energy codes can support water and air quality priorities.

ERI Compliance Path, Opportunities and Challenges

With more and more states adopting the ERI energy code compliance path, it is important to understand the opportunities and challenges associated with implementation and enforcement. Learn how national organizations are working to ensure consistency across software programs, and how third party quality assurance can drive program success.

The Tectonics of Building Energy Code Policy

Shifts toward zero energy policy through codes are propelling leading states and local jurisdictions towards carbon neutrality and strategic electrification. This session will distill the latest [leading edge] energy code-related policies as well as address how states that are still one or more code cycles behind current codes can advance adoption, compliance and beyond-code policies.

DAY 2 Tuesday, July 17 *(Continued)*

Multifamily Codes Cram Session

Become a student of energy codes for multifamily buildings! Without cracking a book, learn about efforts to facilitate multifamily compliance, multifamily-specific codes and standards, and in-field solutions to common multifamily issues such as air leakage.

New Tools to Aid Energy Code Compliance

New compliance paths, more reliance on third party verification and increased reliance on performance documentation for compliance has created a need for new tools and the enhancement of existing tools to ensure verifiable compliance with energy codes. Learn how existing tools are changing to be more user friendly and to adapt to evolving codes and new tools are being developed to increase consistency in enforcement.

Residential Energy Code Compliance Toolbox

Residential energy code compliance is a lot easier with the right tools and understanding. With numerous tools out there, it is hard to pick the right one. This session highlights current efforts to first understand opportunities for improved compliance and then explores training programs that seek to make those improvements a reality. The panel discussion will provide examples of how data, materials, logic, relationships and more can be used to facilitate code compliance.

Third Party Professionals and Commercial Energy Codes

The commercial energy code accepts third party energy professionals as compliance providers. HVAC and lighting commissioning, and functional testing are two key areas where third-party professionals could be used extensively. This session presents the potential benefits of utilizing these professionals and how a code jurisdiction can more effectively interact with them to assure better code compliance, and ultimately, better performing buildings.

Advancing Technology Here Today or Coming Next Year and How Buildings are Part of the Scale

Advanced technologies are occurring across the economic spectrum and buildings and technology included in those buildings are advancing and many are moving or already at some level of scale to be viable in buildings. Codes may be a strategy to help bring these new strategies to scale; from smart devices to transportation and storage to new efficient systems for buildings. Come learn how these technologies are advancing and how states and municipalities are part of this effort.

Field Trip: Blanton Museum of Art

The Jack S. Blanton Museum of Art at The University of Texas at Austin is one of the largest university art museums in the U.S. with 189,340 square feet devoted to temporary exhibitions, permanent collection galleries, storage, administrative offices, classrooms, a print study room, an auditorium, shop, and cafe. The Blanton's permanent collection consists of almost 18,000 works, with significant holdings of modern and contemporary art, Latin American art, Old Master paintings, and prints and drawings from Europe, the United States, and Latin America.

Recently retro-commissioned, now saving \$1M year in energy/cooling costs. Opportunity to engage with the Energy Management Optimization Team who recently achieved a goal set in 2012 to reduce campus wide energy use per sq foot by 20% by 2020.

Jeffrey A. Johnson Award



The Jeffrey A. Johnson award recognizes outstanding accomplishments surrounding building energy codes, and is presented annually at the National Energy Codes Conference.

The award recognizes a leader or a team in the United States (U.S. territories included) for sustained service of the highest caliber in the pursuit of energy-efficiency goals. The award recipient exemplifies Jeff's enthusiasm, his motivation and drive for innovation, and his can-do, no-fear attitude for making a difference. Join us at lunch on Tuesday as we announce the 2018 winner.



POSTERS

Posters will be displayed Sunday, July 15, 5pm-6pm during the reception.

Title: Sustainability Governing Committee

Abstract: The Professional Development Council approved this new combination designation in May 2017 to provide opportunities for licensed architects, professional engineers and code officials to become more involved with the Code Council. The Certified Sustainability Professional designation will require a current AIA, PE, Certified Building Official (CBO), Certified Fire Marshal (CFM) or Master Code Professional (MCP) license or designation; one current energy conservation certification; and one current green building certification.

Title: There is Energy in that Water

Authors:

Craig Conner, Building Quality
Laureen Blissard, Technical Director,
Green Builder Coalition
Mike Collignon, Executive Director,
Green Builder Coalition
Darrel McMaster, owner, Sustainable Homes
Gary Klein, Gary Klein and Associates
Kim Shanahan, Executive Officer,
Santa Fe Area Home Builders Association

Abstract: Energy and water are connected. Purification, pumping and treatment of water and waste water are the largest energy uses for many municipalities. The energy “embedded” in water is significant; therefore, conserving water saves energy. Replacement of potable (drinkable) water with rainwater collected onsite and reused grey water saves energy. Local infiltration of storm water saves energy. The use of low-water landscaping and water-efficient products saves energy. Water limiting restrictions on new construction are expanding. New homes can be much more water efficient than existing homes. New ways to measure overall home water efficiency as a single number will provide a way to compare homes and implement water efficient policies. Homes from a “zero water” homebuilder will be highlighted.

Title: Hawaiian Energy

Authors:

Howard Wiig, Hawaii State Energy Office
Craig Conner, Building Quality
Joe Cain, Solar Energy Industries Association

Abstract: Why does a tropical-climate energy code stand out? How climate-responsive Hawaiian architecture led to the tropical energy option in the 2015 IECC. Traditional (pre-air conditioning) architecture as illustrated by the Honolulu and Kona Airports. Hawaii’s benign climate creates totally different, deep energy savings options. Solar water heating, reflective/shaded walls and flow-through design options being examples. Short travel distances on islands combined with high fuel costs and widespread PV/storage systems make electric vehicles great for Hawaii.

Solar energy is in the newest draft of ICC 700 (National Green Building Standard): In the tropical zone, prescriptive “gold” for a nearly zero-energy home with solar PV, battery storage, and solar water heating. In the performance approach, credit for energy savings from solar PV systems. In a three-tiered option for “Solar Ready,” “PV installed,” or “PV plus battery storage installed.”

POSTERS

(Continued)

Title: California's 2019 Building EE Standards

Author:

Joe Cain, Solar Energy Industries Association

Abstract: California's 2019 Building Energy Efficiency Standards were just approved by vote of the Commissioners. The California residential solar mandate - effective January 1, 2020 - has gained nationwide media attention. This poster will summarize relevant requirements and qualifications for mandatory solar and optional battery storage systems, and how this fits within the standards.

Title: Building Energy Codes for a Carbon Constrained Era: A Toolkit of Strategies and Examples

Author:

NEEP

Abstract: Buildings that are being constructed now will have a considerable impact on our region's energy use 50 to 100 years from now. Carbon reduction goals cannot be met without significant gains in energy efficiency through more efficient building energy codes.

To reduce the impacts of climate change, states and communities in the Northeast and Mid-Atlantic region are adopting goals to aggressively cut carbon emissions and energy use between the years 2020 to 2050. Building energy codes are critical tools to achieving carbon and energy reductions.

This research provides a set of strategies that will better position states in the Northeast and Mid-Atlantic region (the region) to achieve two critical objectives:

- Advance building energy code development and adoption to enact zero energy building codes within the next 15 to 25 years;
- Improve the administration of building energy codes to ensure that desired performance levels are realized.

Title: Status of Building Energy Codes and Supporting Analysis

Author:

Rosemarie Bartlett

Abstract: Presents the analytical approach used for DOE's state energy code adoption maps, the current analytical results, and the current maps.

Title: Improving the Efficiency of New Residential Construction through Improved Energy Code Compliance

Author:

Rosemarie Bartlett, Mark Halverson, YuLong Xie

Abstract: Presents an overview of DOE's residential field study.

Title: Standard 90.1-2016

Authors:

Michael Rosenberg, Mark Halverson

Abstract: Presents highlights of some of the more impactful new requirements in the Standard and its projected impact on energy savings and energy cost savings of new construction.

Title: Prototype Building Models

Authors:

Michael Rosenberg, Reid Hart

Abstract: Describes the makeup of the prototype building models that serve as the basis for DOE and industry technical analysis surrounding commercial building energy codes and highlights some of their more impactful uses.



POSTERS

(Continued)

Title: Advancing Building Energy Efficiency in New York State through the 2018 NYStretch-Energy Code

Authors:

Jian Zhang, Yan Chen, Bing Liu

Abstract: Presents a collaborative project on NY's 2018 NYStretch-Energy Code, the analysis of the energy efficiency measures using selected DOE Prototype Buildings customized to represent the building stock in NY.

Title: Customized Data Center Energy Efficiency Solutions

Abstract: At three different data center colocation sites, a customer of ours conducted a detailed engineering analysis of existing infrastructure, including Computer Room Air Conditioning (CRAC) units, heating and cooling systems, Building Automation Systems, and server rack configuration. By instituting several energy efficient upgrades, including utilization of ebm-papst's energy efficient fans, these sites achieved benefits including significant operating expense savings, precise and automated control of systems throughout their facilities, redundancy, and increased equipment life.

THANK YOU to our moderators and speakers!

(Bios are available at <https://www.energycodes.gov/2018-national-energy-codes-conference>)

TOPIC	MODERATOR	SPEAKERS
Building Science: It's Not Just for the Academics	Lauren Westmoreland	Robby Schwarz, Jimmy Reynolds, Rebecca Morris, Shaunna Mozingo
It Takes a Village!	Christina Rohrbacher	Ellen Vaughan, Becca Trietch, Christie Baumel, Anthony Roy
What's Next: EVs, Energy Storage Systems, and Solar	Jim Meyers	Discussion Session
Progressively Effective Energy Codes	Ken Baker	John Jennings, Sharon Grant, Keith Winston
How Home Rule Communities Implement Codes	Ed Carley	Discussion Session
Where We are Going with Energy Code Compliance	Richard Morgan	Poppy Storm, Kimberly Cheslak, Brad Smith
Existing Buildings	Jason Vandever and Rodney Sobin	Discussion Session
Whose Job is it Anyways?	Chris Herbert	Kim Burke, Robby Schwarz, Tom Hale, Heidi Kasper
The Nexus of Building Energy Codes to Water and Air Quality Benefits	Michelle Britt	Chris Perry, Ed Osann, Jonah Schein, Mike Collignon
ERI Compliance Path	Ed Carley	Dave Roberts, Ryan Meres, Jeremy Williams
Multifamily Cram Session	Alison Lindburg	Eric Makela, Gayathri Vijayakumar, Mike Browne
New Tools to Aid Code Compliance	Richard Morgan	Elliot Seibert, Bob Schultz, Shirley Ellis
The Tectonics of Building Energy Code Policy	David Cohan	Discussion Session
Residential Energy Code Compliance Toolbox	Ian Blanding	Chris Burgess, Justin Wilson, Curt Rich
Third Party Professionals and Commercial Energy Codes	Ken Baker	Jeff Domanski, Ken Baker, Gerald Kettler
Advancing Technology Here Today or Coming Next Year and How Buildings are Part of the Scale	Jim Meyers	Sharon Bonesteel, Joe Cain, Scott Jarman

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